

SKILL INVESTIGATION MAGAZINE

VOLUME 23

FEBRUARY 1951

NUMBER 2



At Carson's Service
Station, the number

This issue
Features... Page Mechanics

The Agricultural Education Magazine

A monthly magazine for teachers of agriculture. Managed by an editorial board chosen by the Agricultural Section of the American Vocational Association and published at cost by Interstate Printers and Publishers, Danville, Illinois.

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Contents

Editorials

Developing Individual Plans for Farming.....	E. R. Hoskins.....	171
Important Now.....		171
Team Work in the Farm Shop.....		171
Conducting a Welding Work Shop.....	W. W. Schrock.....	172
Welding . . . And the Farm Shop Program.....	Harold J. Haynes.....	173
Lumbering Finds Its Place in the Farm Mechanics Program.....	Robert H. Owers.....	174
Teachers Keep up on Farm Mechanization.....	Alvin W. Donohoo, Harold L. Kugler.....	175
Farm Equipment Camp Scholarship Contest.....	Richard Chauncey.....	176
Training Teachers in Farm Mechanics.....	Harold L. Kugler.....	178
Using Special Teachers Makes a Community Program for Adults a Reality.....	Walter P. Schroeder.....	180
Veterans Training Program.....	Arthur Pratt.....	181
A Follow-Up Study.....	Harrell Smith.....	182
Helping Teachers Meet Needs in Teaching Farm Mechanics.....	George W. Wieggers, Jr.....	183
Making Reports Useful.....	J. C. Atherton.....	184
A Challenge.....	F. A. Nylund.....	184
Give Them the Facts.....	Paul F. Spraggs.....	186
Custom Work . . . With F.F.A. Farm Machinery.....	Harold E. Silvernail.....	187
Young Farmer Programs.....	Fred Sanders.....	188
Educational Programs for Young Farmers.....	R. E. Naugher.....	189
H. H. Gibson, Teacher Trainer in Oregon, Retires.....	Glen L. Weaver.....	189
Father-Son Combinations.....	George P. Couper.....	191
Changes in Staff.....		190
To Be Featured.....		190
Fetterolf New A.V.A. President.....		190
Picture of the Month—Preliminary Announcement.....		191

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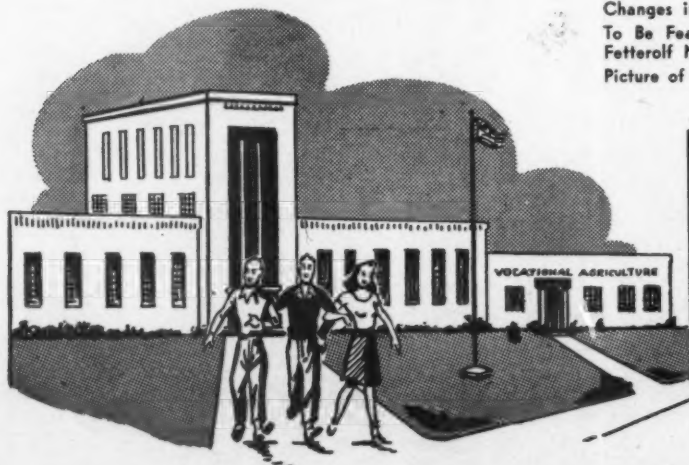
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Editorials

Important now

INSTRUCTION in farm mechanics is important. Faced with the prospect of shrinking supplies of farm equipment and machinery, it is urgent to preserve and protect machines and equipment which are presently in service. The 1950 inventory of machinery and motor vehicles is given as 6.7 billion dollars in terms of 1940 prices. It is only with the help of this machinery that we will be able to produce essential food and fiber with limited supplies of labor.

Any emergency training programs for agriculture should include farm mechanics instruction. Training resources and facilities should be inventoried as an important resource. However, much can be done, here and now, with existing programs by increasing opportunities for farmers to maintain equipment and machinery at peak efficiency.

Teachers of agriculture are performing a effective service in carrying on instruction and assisting individual farmers to maintain equipment in good repair. The opportunity and need to go beyond present levels varies with communities. However, in most communities mechanization of farms moves forward faster than instructional services and facilities. For example, farmers purchased in the past four years almost as many tractors as were on farms in 1940.

In a way, farm mechanics instruction helps to fight the battle of inflation. By getting the maximum value from every dollar invested in our tools of production we reduce pressures on the economy and do our bit in helping to hold prices down. Many hours of additional service from machines are possible if operators use good practices in caring for and operating them.

Instruction in farm mechanics often gives attention to the economic considerations involved in the purchase of new equipment. How much does it cost? What will it do? How much labor will it save? These and other questions are of concern. It all sums up to make the instructional work in farm mechanics an important activity in the present situation.

Team work in the farm shop

BOYS can learn to become good team members in the farm shop. It is a kind of learning often overlooked. Alert teachers, increasingly, are looking for experiences which will aid their pupils to develop desirable behaviors in group situations. In the farm shop instruction they find and utilize many such experiences. More power to them. The opportunities are many. The rewards to pupil and teacher are substantial.

Improving his ability to work with others in the shop has immediate as well as future values to the student. It is only as he and others in the group progress that they gain responsibility for planning and carrying through larger projects. With increased ability students may share in management and evaluation.

More projects can be completed. Tools and equipment are properly used. Shop Management is organized. Confusion and waste of time is reduced. Help from the teacher and fellow students can be secured when problems are encountered. Add to the foregoing the friendly cooperative atmosphere which prevails with all members working as a team and you have a situation which is conducive to mastering the skills essential in mechanized farming. Over and beyond such immediate returns are the long-time gains. Learnings or behaviors like the following have been begun or strengthened—offering suggestions for organizing a group, sharing fairly in group efforts, evaluating individual and group actions. It is to be expected that these and many other desirable team qualities will carry-over from the farm shop into other school activities and into adult life.

Developing individual plans for farming



E. R. Hoskins

SINCE several students and others have asked me to express my views regarding the development of plans for supervised farming programs for vocational agriculture boys and other farm youth, I am writing regarding certain of my convictions. My convictions are based primarily upon close acquaintances and observations of many teachers of vocational agriculture. Let me recall a few—

In the first place, we should not confuse the problem of planning supervised farming programs with many other problems related to the development of worth-while and well-balanced programs for vocational education in agriculture, for example:

1. If a department is overweighted with other than vocational responsibilities or activities, let us change the status of the department or balance the program.
2. If the boys are poorly selected by the guidance service of the school, let us work with the guidance director or administration to make our own guidance (or Junior High School) program more functional in selecting boys who are really interested in farming and related farm occupations.
3. If the teacher is poorly qualified to work on farm management problems with youth and adults (and does not keep close to such problems) let us find him a less strenuous job.

The concept of broader and broader supervised farming programs for high school boys, studying vocational agriculture, has been developing for more than three decades. The trend in this development has been from *projects* to long-time *supervised practice* to long-time *supervised farming* programs. The programs have expanded in scope from such miniature projects as a setting of eggs for the small boy in his kneebreeches to progressive placement and establishment in farming for youth who have assumed considerable managerial responsibility for the operation of farm businesses. Though the continued acceptance of single projects to meet the requirements for supervised farming has not been uncommon, they are seldom suitable except in situations permitting of *great expansion* of single enterprises as specialties. Variations among supervised farming programs are great from department to department within a state and still greater among the several states.

The purpose of this paper is not to discuss supervised farming programs as such, but more particularly the plans for their development under many varying circumstances. For more than two decades teachers of vocational agriculture have attempted to associate teaching and planning and it appears to be full time to admit that many attempts have not been successful.

Though this suggestion may raise a debatable question, it seems obvious that specific directions regarding teaching usually emphasize some type of *group instruction* with the assumption that there may be some opportunity (or even a remote possibility) for a practical application by certain members of the group. Of course, this general philosophy of teaching is not far different from the point of view so often held by academic school men. They too hope that their *general principles* may be applied if and when the learner is faced with a situation where he should make applications. For years the academic school men have envied us our opportunities for immediate application of our instruction. In brief,

(Continued on Page 177)

Conducting a welding work shop

—Tips on a welding clinic for teachers

WOODROW W. SCHROCK, Supervisor, Indiana



W. W. Schrock

A WELDING workshop is an effective way to instruct agricultural teachers and to increase the use of welding in school shops. Many of the teachers are not familiar with gas or electric welding. Upon entering the Indiana-Cambria County Area as vocational agricul-

ture adviser, it was found that one of the weakest spots in the program was the lack of electric and gas welding. A discussion of ways to improve our shop programs revealed the need for welding instruction and practice for the teachers.

Our local oxyacetylene distributor was contacted and told of our program. Together we planned a shop demonstration for teachers and pupils. Then a nationally-known gas and oxyacetylene company was contacted. They very willingly offered to send two welding engineers to put on demonstrations. This was the beginning of our welding workshop.

The first demonstration was not too successful. At the appointed time, the teachers arrived with thirty to forty boys. They crowded around trying to watch the two professionals weld, braze, and cut. Lack of knowledge of the processes involved, and the inability to see, made the demonstration ineffective. We decided that the following year we would try a different method.

New Approach

The second year of our "so-called" welding clinic, we took the welding engineers to the various high schools to give their demonstrations. The teachers were notified in advance and the boys were requested to bring in farm implements that needed repaired. A very strenuous week followed. The welding engineer and the writer traveled from school to school, and spent a half day in each department. At the end of the week, we had visited ten schools, traveled approximately five hundred miles, and set up and taken down our equipment ten times. We had repaired everything from copper kettles to heavy tractor castings. This time we felt that we were a little nearer to the solution than the previous year, but there was still room for improvement. We had not practiced the F.F.A. motto, "Learning by Doing," because the welding engineer did all the work, and the teachers and boys had merely observed.

During the following months, the local distributor and the author groped for an idea that would put the welding into the hands of the teacher, who in turn would present it to the boys. We contacted the various schools that lacked

gas welding equipment, talked to the administrative heads, and sold them on the advantages of gas welding in the farm shop. It was suggested that schools not owning equipment should purchase it as soon as possible. Much to our surprise, when spring arrived all our departments owned new gas welding and cutting outfits, complete with small "non-rental" farm cylinders, six pair of welding goggles, asbestos gloves, and all the necessary fluxes and rods. This equipment was an added attraction in the shop, but as yet it has little utility.

Building Interest

After securing a large building and setting a date for the clinic, we aroused interest by sending welding literature and textbooks furnished by the welding company to each school. The chance to actually get their "teeth" into the job of welding made the teachers enthusiastic concerning the plan. They were notified to bring items to repair by welding, and plow points to hard surface.

The first day of the third annual clinic started with the welding instructor explaining the uses of the various pieces of equipment, safety precautions, and how to set up and properly adjust the equipment for a specific job. The lectures were supplemented with sound movies and effective blackboard illustrations. By the middle of the afternoon, most of the teachers could confidently "pick up" a torch, light it, and adjust it properly.

The next morning everyone arrived ahead of schedule eager to begin work. Each teacher then proceeded to weld a work table for himself from angle iron and fire brick provided as part of the materials. Some of the tables were crude, but they served the purpose. Various sizes of plate stock were brought to the clinic, and the basic principles of acetylene welding were taught. Each teacher worked at his own table while the instructor demonstrated and explained. When the instructor saw a poorly adjusted torch, or a teacher using too much heat, he would call attention to the mistake over the sound amplifier system. A sound system is essential because the noise of ten or twelve welding torches makes normal speaking too difficult. Soon every man in the room could "lay down a bead, brush off the oxides," and say, "Look what I did!" After a few hours of flat-steel welding, bronze was introduced. Another instruction period followed to explain the nature of the rod, and how the job should be done. Additional movies and several demonstrations completed the fundamental instruction. The remainder of the day was occupied by steel and bronze welding.

Advanced Levels

The third day the teachers were quite confident of their ability. They would proudly take a completed job to the in-

structor and say, "What do you think of this, Mike?" Mike would offer words of praise and they would return to their welding tables.

The fourth day, our instructor told us we were ready to do overhead welding. Rigs were welded to the table and cut sections of pipe were secured to weld overhead. Soon the teachers learned to master this phase of welding, and they were all pronounced overhead welder.

The fifth day of our clinic the teachers learned the method of wrinkle bending and the welding of white metals, die cast and aluminum. Again the new work was supplemented by a lecture introducing them to the proper rods and fluxes. This was one phase of the welding that did not progress so rapidly. In welding white metals it was hard to determine the degree of heat with which to work and sometimes the project would "fall to pieces" before the teacher realized the temperature was sufficient to weld. However, by the end of the day, each teacher had completed numerous small projects in white metal work and felt very "chesty" about it.

The last day of the clinic was spent hard-surfacing plow points, cultivator shovels, and many other wear parts. An interesting phase of the work took place at this time. They were introduced to the temperature stick which took the guess work out of hard surfacing. By consulting a temperature chart you can select the proper temperature for the metal in use. Heat the metal, and when the temperature stick smears on it you are ready to hard surface. Cast iron or steel receive an application of the hard surface rod and are promptly wrapped in asbestos paper to prevent rapid cooling. Unwrap in half an hour and inspect your work. This procedure is especially necessary for cast iron to prevent it from cracking while cooling.

Two nights of our welding clinic were devoted to a refresher course in electric welding. It was found that most of the teachers could strike an arc and lay down a presentable bead, therefore the need for extensive instruction in electric welding was not necessary. The teachers agreed that many of our farm welding jobs do not lend themselves as well to electric welding as gas. For example, cast iron, white metal, hard surfacing, and cutting are more effectively performed with gas welding than by electric welding.

Popular With Teachers

The high degree of teacher interest and participation was one of the fascinating features of this welding clinic. No one had to be coaxed or prodded to work. In fact, it seemed like a new course in vocational shop work to all of them. This in itself is a testimonial for this type of welding instruction. The clinic had scarcely been completed when the men were making plans to attend the following year. The second full-week clinic was completed in June, and interest proved just as high as the previous year. In travels from shop to shop, a decided improvement in our vocational agriculture farm shop programs was apparent. We are now making heavy

(Continued on Page 182)

Welding . . . and the farm shop program

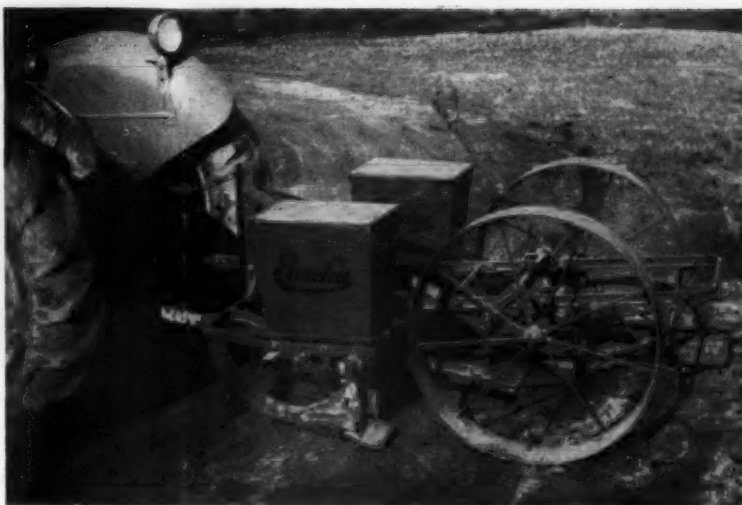
HAROLD J. HAYNES, Teacher,
North Troy, Vermont

OF all the farm shop skills we are obliged to teach, probably the one most fascinating to the enrollees is welding, both electric and acetylene. This is true of high school, young farmer, and adult groups. Since all types of agriculture have become so mechanized and the farmers have taken advantage of the high prices, they have availed themselves of many labor-saving devices in the recent years. This makes it necessary that teachers of agriculture keep abreast of the times and be able to teach the repairs necessary for keeping this machinery in working order.

Welding, of course, has become the biggest thing in keeping machines going. The welding equipment can be used for three specific purposes around farm machinery: (1) to weld broken parts or pieces; (2) to build up worn parts; and (3) to construct simple machines from available materials. It has been found that the teaching of welding techniques is a very interesting part of the work with all age groups and that about 75 per cent of the enrollees are able to do satisfactory work with both acetylene and electric welders after proper demonstrations of the use of welders. Because of the high price of some of the ready-made machinery on the post-war market, many of the enrollees have used their own or the school's welders to make many of the simpler machines useable on their dairy farms. Students have saved themselves a lot of money by being able to do such jobs and are getting satisfactory service out of the items so constructed.

Inasmuch as it seems that all departments should offer this training, it is felt that teacher-training personnel should make certain that all new graduates have practical work along this line in college and a lot of effort should be made to keep in-service personnel up to date with new techniques in welding and making repairs. Teachers will do well to get all the available free materials on welding from manufacturers of welding machines. These enable one to keep up with new welding equipment and a lot of the material has helpful hints that are valuable in doing the jobs one is apt to be confronted with on the farms of enrollees.

As a final thought, it is believed that training in welding should be so complete that the farmer is confident enough in his work to tackle his own repair and construction work; and when finances permit, to have his own welder in his home farm shop. Our school shops are primarily established as educational institutions; naturally they become to some extent service establishments. If shops can be kept busy instructing new personnel, they are of greater service to the community than if they become a service repair center for as many as they can accommodate—which makes it impossible for new members to enter. ●



Old style planter converted to tractor job.



Home made manure spreader with power take off.



Home made saw rig.



Learning to use a chain saw with safety is desirable where lumber is an important farm crop.

Lumbering finds its place in the farm mechanics program

ROBERT H. OWERS, Teacher, Deerfield, Massachusetts



Robert H. Owers

Deerfield lies in the rich Connecticut Valley farming area surrounded by wooded hill country. Most of the boys coming from the valley farms have had little, if any, woodlot experience. These boys have been quick to loose interest in a project requiring lumber. Seldom do they have the lumber or sufficient money to buy the necessary materials. A solution to this difficulty seemed to lie in the direction of cooperative effort, a woodlot, axe, saw and elbow grease. Obtaining the woodlot was the chief problem.

One day the local water commissioners inquired if the F.F.A. chapter could help them out in planting several acres of abandoned farm land to spruce and red pine. The boys made an agreement with the water department containing the following provisions:

1. They could cut from the water shed area all the mature trees needed to fill their schoolshop needs.
2. The water shed area would be available for woodlot management practice, demonstrations and other class work.
3. The chapter could thin out spruce stands on the watershed selling the removed plants for Christmas trees, with one-half of the profit going to the water department.

In return for these privileges the boys were expected to:

1. Assist the water department in setting out trees.
2. Assist in pruning red pine stands.
3. Leave cut over areas clean and observe the usual fire and safety regulations.

As a result of this working agreement both parties have been happy with the project to date. The boys have given the project their enthusiastic support. Twelve thousand feet of pine, hemlock and mixed hardwood were cut last winter, much of the work being done on Saturdays and during vacation periods. The lumber is neatly stacked on the school grounds available for shop use. The plan is to cut annually to maintain the present stockpile and to continue using the watershed facilities for the woodlot instruction of new classes. During the spring of 1950, several thousand young trees were planted on the watershed. The boys also received training in pruning stands of young red pine

and harvested Norway Spruce for the Christmas tree trade.

From an educational standpoint the woodlot experience has been most worthwhile. The State Extension Forester, has been very co-operative in this project. He has instructed the boys in marking lumber trees and lining out areas for planting. All the boys have developed skills and received training in the following woodlot jobs: cruising a stand of timber, marking mature trees, felling trees, using crosscut and chain saw, hauling and skidding logs, burning brush, planting trees, pruning red pine stands, cutting Christmas trees and selling Christmas trees.

We feel that this is at least a good start in preparing boys to handle effectively the typical farm woodlot.

Health bulletin

Inquiries made hereabouts lead us to believe that teachers of agriculture generally have not had the Health Bulletin for Teachers, issued monthly during most of the school year by the Metropolitan Life Insurance Company, called to their attention. The bulletin is available, free, on the basis of one copy to each teacher simply by the teacher's requesting the company to place his name on the mailing list.

—Pennsylvania Agricultural Education



Loading logs on the school truck.

Teachers keep up on farm mechanization

ALVIN W. DONOHOO

Teacher Education, University of Minnesota

HAROLD L. KUGLER

Teacher Education, Kansas State College

WHAT type of in-service instruction in mechanized farming do instructors of vocational agriculture want as a part of their in-service training program? While this article will not completely answer this question, it will explain a type of in-service instruction offered in mechanized farming at the University of Minnesota this past summer.



A. W. Donohoo



H. L. Kugler

A survey among the agriculture instructors of the state indicated a demand for work of graduate level in mechanized farming. This interest was shown when approximately 50 instructors enrolled for the summer work. For a three-week period the instructors met at university farm for the first phase of the instruction. This part of the instructional program dealt with techniques used in teaching mechanized farming, including integrating mechanized farming into the four-year vocational agriculture program, selecting essential shop equipment, use of the demonstration, job sheet, and class lesson as methods of presenting teaching material. Use of visual aids, new teaching aids and safety were topics given careful consideration. Actual participation in development of skills was not considered during this period.

The instructors were asked to study the mechanized farming problems on farms in their home communities. They were then asked to develop a course of study for their vocational agriculture department that would apply to their local community. Instructors were encouraged to include in this course of study work for high school students, young farmers and adults. The course of study developed included desired skills to be taught as well as a list of jobs which would help develop abilities of the students. The development of the

course of study was an attempt to help each individual instructor improve his mechanized farming program.

At the end of the three-week period, instruction was moved out into selected schools of the state where intensive training in certain skill areas could be given. It was felt that if instruction

(Continued on Page 176)



Agriculture instructors framing and pouring concrete for a sidewalk.



Proper plow adjustment was a part of intensive inservice instruction.



Welding instruction proved popular with Minnesota teachers. Left to right: Verl Rollings, Garden City; Donald Paulson, Albert Lee; Layton Hoysler, Faribault; Ben Shonka, Lincoln Electric Co.; Harrison Schmeising, Farmington; Paul Marvin, Faribault; and Henrik Aune.

Teachers keep up

(Continued from Page 175)

were offered in regular vocational agriculture shops, that the training would be more applicable to the problems of the vocational agriculture instructor. Teaching centers were established at Olivia, Alexandria, Faribault, Staples, and Grand Rapids, Minnesota. By establishing these five centers no more than ten instructors were in any one group. This made it possible to give the instructors considerable individual attention for a two-day period.

A survey of the group showed that there was a need for information in the following areas: Shop facilities and arrangement, concrete, welding, plow adjustment and use of the farm level. By combining work in plow adjustment and use of the level, it was possible to give a half day of concentrated instruction in each area.

Under the heading of shop facilities and arrangement, the groups were interested in such problems as making the best use of floor space, selection of power tools and equipment, kind and number of references needed and color dynamics in the shop. In each training center one piece of shop equipment was selected and painted according to the color code supplied by Pittsburgh Paint and Glass Co.

In welding the instruction given depended upon the previous experience of the vocational agriculture instructor. If a man had no previous experience in welding he started on the basis of a beginner. The more experienced students were given instruction in such jobs as use of special alloy rods, cast iron welding and hard facing of plow shares. Demonstrations were given in building simple welding projects that might be used for a beginning high school class.

In each training center practical concrete jobs were undertaken such as framing, pouring and finishing a section of sidewalk or concrete floor. In addition to these large concrete problems, small projects such as hog troughs were made. By the use of the small concrete projects the instructor of vocational agriculture can give each of his high school students experience in proportioning, mixing, pouring and curing concrete during winter months.

To most of the group the farm level was a new tool and one that is not being used in vocational agriculture departments in Minnesota. The instructors were interested to learn of the many uses for the farm level. In this area practice was given in running a line of levels and profiles. The group also found the level a useful tool in leveling forms for concrete construction jobs. It is felt that more of our vocational agriculture departments will find need for the farm level as the result of this training.

In all cases, these skills were taught with the idea of showing the instructors of vocational agriculture procedures which he could use in providing instruction in mechanized farming program in the local community.

Farm Equipment Camp Scholarship Contest

RICHARD CHAUNCEY, Teacher, Cato, New York



Richard Chauncey

safely and efficiently operate farm equipment.

Some of the teachers had been looking for an opportunity to offer F.F.A. camp scholarships for a number of years. These men felt that both purposes could be accomplished in one state wide contest. As a result the New York Association of Teachers of Agriculture appointed a committee for 1949-50 composed of Mr. Ethan Randall, teacher at Skaneateles; Mr. Edward Mott, teacher at Genoa; Mr. James Hatch, state supervisor; Mr. Robert Burnette, secretary of the Equipment Dealers Association; and the author as chairman.

The committee set up the contest and had it approved by the executive council of the New York Association Future Farmers of America. The contest was in operation by April 15, 1950.

The purposes of the contest are:

1. To encourage the use of desirable and improved practices in the operation, maintenance and adjustment of farm tractors and other types of mechanical farm equipment.
2. To encourage and promote the practice of safety precautions in connection with the operation, maintenance, adjustment and use of farm equipment.
3. To encourage the establishment of adequate facilities for the daily maintenance of farm equipment on farms.

IN 1940 and '49 the New York Farm Equipment Dealers Association, through Robert C. Burnette their secretary, offered to sponsor a contest for Future Farmers that would increase their knowledge of farm machinery maintenance and their ability to

The contest operates on the basis of local chapter entry in the state contest. Each chapter holds its local elimination contest. The individual winner on the chapter level then represents his chapter in the county group contest. This winner is then entered in the state contest with awards made at the annual state F.F.A. convention.

The awards made by the New York State Equipment Dealers Association are:

Local Chapter Level

- 1st—Scholarship for one week at the State F.F.A. Camp (\$14.50)

County Group Level

- 1st—\$25.00
- 2nd—\$15.00
- 3rd—\$10.00

State Level

- 1st—4 awards of \$50.00 each
- 2nd—4 awards of \$25.00 each

To compete, a Future Farmer must keep a complete record on a tractor, not necessarily his own or his father's, for six months. The form used for one month is shown.

The contestant must:

1. Attend and participate in regularly scheduled demonstrations and practice sessions pertaining to the selected maintenance and adjustment jobs listed on the attached operations sheet. (See check list)
2. Perform the selected operations on his home farm or other tractor in accordance with the recommended practice and as needed during the period of the contest. (See check list)
3. Secure the certification of his parent, teacher, guardian or co-operating farmer in connection with each operation each time it is performed. (See check list)
4. Prepare a carefully written step by step statement at the conclusion of each operation with appropriate headings and using complete sentences, explaining each maintenance

TRACTOR RECORD

New York Association Future Farmers of America
New York Farm Equipment Dealers Association Contest
In Cooperation with The Association of Teachers of Agriculture of New York

NAME														
MONTH	AMOUNT OF GREASE	Service Oil Filter	Lubricate	Service Air Cleaner	Service Crankcase Breather	Check Battery	Check Tires	Service Cooling System	Clean Fuel System	Check Transmission and Differential	Change Oil (Record amount used)	Hours of operation	Gasoline Used	Cost of Repairs
1														
2														
3														
30														
31														
		TOTAL FORWARD →												
		TOTAL →												

operation performed by him.
(See check list)

5. Prepare a descriptive statement to show all improvements and progress made toward providing satisfactory facilities on the farm for farm machinery maintenance. Floor plans and other drawings and sketches may be included for classification if desired.

The Association of Teachers of Agriculture of New York appointed the same committee to function in 1950-51 as operated in 1949-50, with the addition of Mr. Robert Watson, teacher of agriculture at LaFayette.

The judging of the contest is done by the teachers and chapter members on

the local level. The teachers of the group arrange for the judging on the group level. A committee composed of one representative each, of the State Agricultural Education Bureau, the Cornell Rural Education Department, and the New York Farm Equipment Dealers, does the judging on the state level.

Seventy-two chapters and 551 boys entered the 1950 contest. It is not known at this writing how many completions will be recorded. The committee is planning some revisions of the contest for 1951 that will improve and simplify it and should result in larger registration.

Developing individual plans for farming

(Continued from Page 171)

it would seem to me that many teachers have attempted to teach vocational agriculture in reverse. In other words, may we say "the cart has been put before the horse?" Why not let group instruction supplement planning, with the major emphasis upon *planning*? Why not place the individual first and consider him in relation to his interests, abilities, limitations and opportunities? Farming opportunities in his *specific situation* are of primary importance, but even with limited opportunities a boy with a keen and genuine interest in farming or a closely related occupation can find a local farming situation with an opportunity for planning his part in its operation and management. Finding favorable situations where the boy can grow and develop is a challenge to the teacher. Farm practice departments do this. It has been done for thousands of employee-trainees by the Veterans' Administration.

We need not separate teaching and planning (as many do) but there is considerable evidence to convince me that we need to reverse their order. Let it become planning and then teaching. This is certainly worth a trial and it has succeeded beyond all expectations in the few selected situations where pioneer teachers and leaders of vocational agriculture have progressed to the extent of trying it. The pioneer work on the Individualized Curriculum in Mississippi is an outstanding example of placing individual planning first. In my judgment individual planning and individual instruction are one and the same thing. It works for farm shop, farm inventory, analysis of the farm business, D.H.I.A. records and the Field Crop Record book. Why limit it?

After individual planning is once launched and under way, group instruction follows naturally for either small or large groups with similar or related problems to solve. In such situations, the teacher of vocational agriculture has a most unusual opportunity to develop major long-time units of instruction which are certainly in keeping with modern educational thought. The necessary group instruction will certainly not follow *one* pattern in such a plan for teaching, though as supervised farming programs broaden in scope, groups of boys will have many problems in common. The specific occasions for group instruction should occur naturally or when several boys need to discuss certain related questions regarding their problems; or when they need a demonstration related to certain specific procedures that they are trying to follow; or when they wish to take a trip to clear up the practices in relation to certain farm operations; or when they need to have scientific reference materials explained, or in many other natural situations for group instruction and group discussion, including phases concerning larger related units, as buying or selling jobs.

The initiation of bigger and better
(Continued on Page 188)

Summary Check List for Farm Equipment Camp Scholarship Contest

Pupil _____ Address _____
School _____

OPERATION	Demonstration		Tractor Record Summary	Written Report ***	Evaluation	
	Teacher Dealer	By Pupil			Local	County
1-Survey of tractor power on the farm and study of the operator's manual.....						
2-Safe Tractor operation; a-meet driver's test*** b-make one hitch to a machine***.....						
3-Service a-sparkplugs..... b-generator..... c-starter..... d-magneto..... e-wiring, short circuit identification..... f-lights, replace fuse and bulb..... g-battery.....						
4-Check parts of fuel intake & carburetion system a-clean sediment bowl..... b-adjust carburetor..... c-inspect manifold, muffler.....						
5-Service air cleaner.....						
6-Service cooling system.....						
7-Lubricate tractor a-replace or wash filter..... b-check breather..... c-replace crankcase oil.....						
8-Check lubrication of final drive and transmission a-check condition of lubricant in transmission case..... b-check final drive..... c-check belt pulley.....						
9-Check general lubrication of tractor a-check 10 hour lubrication..... b-check 60 hour lubrication..... c-check 1000 hour lubrication..... d-check 6 month lubrication..... e-check 1 year lubrication..... f-check oil spots.....						
10-Study power applications a-adjust clutch..... b-adjust power lift..... c-adjust drawbar hitch..... d-determine correct pulley for given machine.....						
11-Winterize tractor a-radiation..... b-crankcase..... c-aircleaner..... d-transmission..... e-tires.....						
12-Become familiar with some common farm tractor difficulties a-engine hard to start..... b-engine overheated..... c-incorrect oil pressure..... 1-too high..... 2-too low..... d-using too much oil..... e-using too much fuel..... f-set valves for clearance.....						

Instructions:

- Column 1 to be initiated by teacher or dealer at time of demonstration.
Column 2 to be initiated by teacher, dealer or parent at time of pupil demonstration.
Column 3 summary of number of times pupil had job experience during contest period, to be summarized from tractor record.
Column 4 for teacher appraisal of written record.
Column 5 for teacher appraisal of local standing.
Column 6 for committee appraisal of county standing.
Items marked *** are to be evaluated only by the teacher.



Arc welding is one of the units of instruction included in the course entitled Farm Mechanics. Farm type arc welders and electrodes are used in providing instruction.

Kansas reports on a revised program of . . . Training teachers in farm mechanics

HAROLD L. KUGLER, Teacher Education, Kansas State College



Harold L. Kugler

TEACHER training courses in farm mechanics on the college level provide the information and basic skills which the instructor of vocational agriculture must acquire to meet the demands of mechanized agriculture. Have the teacher training courses in farm mechanics kept pace with farm mechanization? Are the college graduates prepared to meet the demands of mechanized agriculture in the local community? Have you observed the curriculum which provides training in the agricultural engineering phases of farming in your state?

The present trend in farm mechanization demands that the instructor has a thorough knowledge of information combined with basic mechanical skills. Arc welding is a practical example. There are many problems in farm machinery repair, maintenance and construction which require welding. To provide adequate instruction for the young farmer, the instructor is required to know more than how to run a bead. He must be able to select proper electrodes, identify kinds of metal and recommend the best procedures to follow in making maintenance repairs.

There are many other areas in the field of farm mechanization such as small farm building construction and

maintenance, farm tractor care and maintenance, farm machinery operation and adjustment and rural electrification.

Teacher training in farm mechanics quite often consists in the development of skills for using small hand tools and the study and selection of farm equip-

Course Name and Credit Hours	Objectives
Welding (1 Semester Hour) 1 hr. lec., 2 hrs. lab. per week	The theory and practice of fusion welding, covering gas and electric welding.
Farm Mechanics (2 Semester Hours) 6 hrs. lab. per week	Shop skills for teachers of vocational agriculture including taps and dies, drilling, soldering, babbiting, use of hand tools and tool sharpening. Metal lathe work and oxy-acetylene welding with direct application to the repair of farm machinery.
Farm Power (3 Semester Hours) 1 hr. rec., 6 hrs. lab. per week	Selection, operation and maintenance of internal combustion engines; principles of valve timing, ignition, carburetion, cooling, lubrication, and fuels; with special emphasis on repair and reconditioning.
Farm Machinery Repair (3 Semester Hours) 1 hr. rec., 6 hrs. lab. per week	Construction, repair, operation, adjustment, calibration, and maintenance of farm machinery and equipment. Special emphasis is given welding as used in machinery maintenance. Each student is required to construct or repair one piece of farm equipment.
Agricultural Engineering Applications (2 Semester Hours) 6 hrs. lab. per week	Practical laboratory exercises including surveying, terracing, contouring, drainage, irrigation, fencing, electric wiring, farm water supply, sewage disposal, heating, lighting, refrigeration, etc.
Farm Buildings Construction (3 Semester Hours) 1 hr. rec., 6 hrs. lab. per week	Planning and construction of buildings and equipment for the farm; reconditioning wood working tools, concrete and masonry, farm carpentry, painting, new building materials, and cost estimates. Students participate in constructing concrete projects such as steps, walks; painting garages; reroofing old buildings and constructing small farm buildings.
Farm Mechanics Methods (3 Semester Hours) 1 hr. rec., 6 hrs. lab. per week	Methods of teaching farm mechanics in vocational agriculture, including the organization and equipment of the farm shop; preparation and use of job sheets and instruction sheets; practice in the demonstration of shop skills and in the construction of farm mechanics projects. Each student plans a course of study and develops teaching aids.

ment. This type of program is satisfactory as far as it goes but it is not adequate to meet the needs of the present farm operator.

The young farmer has many required qualifications which contribute to his success. Mechanical aptitude is one of these. Some individuals inherit a tendency toward talent along this line. Others find it more difficult to develop mechanical skills. Teaching farm mechanics on a "doing basis" is a means of developing the ability to meet the demand of modern day agriculture. If a teacher is to teach on a "doing basis" it would be advantageous to him if he were trained in the same manner. Any individual who spends as much as an eight-hour day working on a farm, will agree that there are a multitude of mechanical problems which exist.

An outline is submitted herewith of what is being done to meet the needs of the teachers of vocational agriculture in the farm mechanics training program in Kansas. Each state has an individual organization problem. It is not anticipated that this type of program will be adopted universally.

Many people think that the courses offered on a teacher training level have not kept pace with the trend that is taking place with farm mechanization in the past twenty years. Young men enrolled in Institutional on the Farm Training are requested to keep records of the farm business. Many of these men have investments in machinery and equipment which equal from 38 per cent to 50 per cent of their total investment. This situation alone is enough to merit giving more attention to the training program which is designed to develop their abilities in farming.

In order to meet the needs of the pre-service preparation of Kansas teachers in the agricultural engineering phases of vocational agriculture, a revision¹ was made in 1946 of the 17 semester hours of undergraduate work required in the area of farm mechanics. With the exception of 1 semester hour of welding, all of the remaining 16 semester hours of training in the field of farm mechanics are now provided by the Agricultural Engineering Department. Enrollment in these specified courses offered by the Department is restricted to students enrolled in the agricultural education curriculum. This makes it possible for the instructor responsible for the course to offer instruction in each course in a manner similar to that which can be used in high school. The description of the courses now required of all students at Kansas State College who qualify to teach vocational agriculture in Kansas is included. The listing includes the semester hours of credit together with a brief statement of objectives.²

¹A copy of the summary made of the survey which was conducted among vocational agricultural teachers to determine needs in farm mechanics training is available. Upon request Professor Harold L. Kugler, Agricultural Engineering Department, Kansas State College, Manhattan, Kansas.

²A course outline which gives detailed information concerning objectives, course content, reference materials and procedure in providing instruction in each course is available upon request.



Students apply aluminum roofing find experience beyond class room instruction essential.



Tractor repair and adjustment has priority in new program of farm mechanics instruction.



The weed sprayer represents a type of student instruction project.



An educational exhibit.



Weed control demonstration.

Using special teachers

Makes a community program for adults a reality

WALTER P. SCHROEDER, Teacher, Olivet, Michigan

ADULT education in agriculture at Olivet was started in 1939 with a combined young-farmer and adult class taught at the school. Adult classes have been held every year since 1939. During the past four years, from nine to twelve classes have been conducted each year. From 110 to 130 farmers have enrolled during each of these four years. This program has been possible at Olivet through the use of special teachers and the use of neighborhood groups to form classes.

Organizing the Programs

During 1946, basic and long-time objectives were formulated with the aid of an advisory council which studied data on the community. The council liked the idea of neighborhoods forming classes. This plan has been followed and found successful.

Not only men but women and older youth meet together in homes for classes during the winter months. About one fourth of the farm families in the Olivet area are reached each year through this type of program. As it is impossible for the author to teach all of the classes, special teachers are used.

Using Special Teachers

Through visiting several farmers in each neighborhood, it is not difficult to find one or two farmers who are highly recommended as special teachers. A special teacher from each neighborhood is selected through this process and from eight to ten of these men agree not only to meet their neighbors weekly during the winter, but to meet weekly at the high school for a training session. In every case for four years, special teachers have assumed their responsibility to be present at the weekly training session and to teach a class each week in their neighborhood. These farmer-teachers receive special teaching certificates and \$50 for their work in the program.

Conducting the Program

Each year the special teachers ask their neighbors questions on the agricultural needs of the community. These are reviewed by the special and regular teachers to form the basis for the current program. The current program is correlated with the long-time needs by the council.

The special teachers assist in making a topical breakdown of the major problems to be studied each year. The first training session is given to methods of

organizing and teaching the neighborhood class. At subsequent training sessions methods are discussed and materials presented on the lesson for the week which will help each teacher in teaching his class. The discussion type class is most common. Demonstrations, field trips and moving pictures are also used in neighborhood groups. The training class for special teachers is considered a demonstration lesson on how to teach that week's lesson. Special teachers are supplied with enough folders and materials for all class members. Many farmers attend the class in their neighborhood regularly yet never come to the school for any type of function.

Carrying Out Follow-up Instruction

The special teacher is in a strategic position to do follow-up work as his neighbors consider him to be a good farmer. The most successful special teachers have assisted their neighbors in many problems of soils, farm management and dairying, as these subjects have received emphasis during the past four years. The regular teacher makes an effort to visit each farmer enrolled and provide educational assistance to those with the most pressing needs. One of the advantages of the special-teacher neighborhood class plan is that many farmers are becoming a part of a community school program which is benefiting them and the whole community.

Evaluating the Program

The most significant type of evaluation is done by the farmers themselves



Weekly training sessions for special teachers are featured.



The achievement banquet for farmer enrollees is well attended.

Veterans training program

Famous firsts

Story of an I. O. F. graduate

ARTHUR PRATT, Farm Veterans Teacher—Lyndon Center, Vermont



Many classes are held on the farm

through continued participation in the program.

Progress in relation to objectives is studied by farmer class members, special teachers, regular teachers, the advisory council, board of education, school administration, and outside educational leaders. These people meet both formally and informally to discuss progress and give direction to the program. Factual data are secured where possible to provide a basis for decisions. In one case this has been done through a systematic study of the opinions of farmer class members, special teachers and the administration.

Evidence on progress is noted through the use of field trips and tours by farmers, visits to farms by special and regular teachers and the use of check lists of approved practices.

The information in this article deals with only one part of a total program of vocational agriculture. As the school at Olivet is endeavoring to be a community school, there are many aspects of the community-wide total program of agriculture and general adult education which have not been discussed. One of the goals of the school is to provide a functional program of education for people of all ages. It is the desire of the school that the various aspects of the agricultural adult program be closely correlated with and operate smoothly within the total program of education. ●



Varied approaches are made to the community problem of weed control.

THIS is a story of a boy with "famous firsts." He was first to condemn and first to accept. But let's go back to the beginning. Scott Vance was one of five children, two boys and three girls. His mother died when he was a child and his father struggled to keep his family together on first one, then another farm. After graduating from high school, Scott enlisted in the Navy. After his return he was married and



Arthur Pratt

Herd Improvement work and harranged on its cost. But he signed up first in the class and twelve others followed him.

He has been a pioneer in pasture improvement. Through improved seeding methods, better seeds, more fertilizer and adequate lime, he has the basis of good pastures. His management has been tops. Rotational grazing, clipping, adjusting grain-milk ration, and supplemental feeding have come easily to him. In three short years he has brought his pastures up to compete with long established farmers in the New England Green Pastures Contest. He was third prize winner in the county.

Scott was the first in the class to use a trench silo. He bought more fertilizer per animal unit than anyone else in



First of the maple sugar season. Courtesy of Caledonia Record

got a job in an auto supply store. After two successful years there, his father was stricken with a series of paralyzing strokes and Scott gave up his job to run his father's farm. It soon became apparent that his father would never work again, so Scott bought the farm from his father and enrolled in my class on August 1, 1947. He had no cash to put into the enterprise but his father took a second mortgage to assist in financing the operation.

At the end of three years he had paid for all his personal property and had begun to work his real estate mortgage down. He bought a new tractor, a new truck, a second-hand car and about \$1,000 worth of new machinery. All of this will soon be paid for.

He was the first in the class to condemn artificial breeding. He cried loud and long of the disadvantages of it. As the advantages were explained, he weighed them carefully in his mind. He was the first in the class to sign up for the program and now sings its praise the loudest.

He belittled the advantages of Dairy

the class. He is active in community work—holds town office and attends most agricultural meetings in the county.

In 1948 he bought 50 tons of hay. Then he bought fertilizer. In 1949 he bought 5 tons of hay. In 1950 he sold hay. This was done on the same amount of land with about the same amount of stock.

Scott has big plans for the future and Scott is the type who can and will carry them out. He will continue to improve his stock through selective breeding and raising replacements. He will continue land improvement through soil testing and application of results, better seeds and land reclamation. He will build up his machinery inventory through careful purchasing and proper handling. He will improve his buildings by careful maintenance and repairs.

Scott was graduated from my class 3 months ago, but he wouldn't miss a class on a bet. He continues to attend so that he can help keep abreast of the times. I wish there were more Scotts in my class, because it is men like him who spell "success" to the future of agriculture. ●

A follow-up study of West Virginia State and American Future Farmers

HARRELL SMITH, Teacher, Keyser, West Virginia



H. Smith

THE study was organized in 1948. The purpose was the correlation of the present status of State and American Farmers with that of their interest at the time of receiving the degree. The study revealed their present location, occupation, farm ownership, reasons for

not farming, influence of F.F.A. leadership training and plans for the future.

The State and American degree holders were contacted either personally or through the teacher. These men were interviewed with the idea in mind of ascertaining the number of West Virginia State and American Farmers who had become established in farming, partnership farming with relatives, farm renters, share croppers, farm-related occupations, professional agricultural or non-agricultural occupations.

Four hundred thirty-two of the 456 State Farmers and all 38 of the American Farmers were contacted. This represents all the degrees conferred from 1929 through 1948. Sixteen of the State Farmers were placed on the deceased list and 8 persons were not located.

The occupational distribution of the State Farmers revealed 58.35 per cent in agriculture, 36.75 per cent of whom were in farming and 22.60 per cent in related occupations. The 41.66 per cent classified as non-farmers were associated with the following occupations: high school and college students, teachers, factory workers, store business, coal mining, telephone company, electric company, railroad worker, state road commission, carpenter, saw mill, garage and in the service of our country. The distribution of the American Farmers revealed 78.95 per cent in agriculture, 63.17 per cent of whom were in farming and 15.78 per cent in related occupations. The 21.05 per cent classified as non-farming were associated with the following occupations: Coal shovel operator, Diesel mechanic, saw mill operator, carpenter, furniture company and factory worker.

Approximately one-third (30.67 per cent) of the State Farmers and one-half (45.83 per cent) of the American Farmers owned their own farms. Partnership farming seemed more popular as 46.62 per cent of the State Farmers and 42.50 per cent of the American Farmers were working on the farm with their parents. One State Farmer was renting, another share cropping and three were spending part-time on the farm and part-time in industry. The American Farmers were not renting or share cropping but one person was farming part-time.

Influence of F.F.A. Leadership

There has been considerable discussion by many who are associated with F.F.A. about the leadership influence. Many persons have expressed themselves as feeling it takes the boys from the rural life toward the urban. It has been clearly pointed out by a large per cent of those who are not associated with farming that the training taught love for the country and farm life. One hundred eighty-three of the 456 State and American Farmers were considered as non-farming. They were working in non-farm occupations. Answers given in reply to a questionnaire concerning F.F.A. influence were as follows:

Desire to become farmers.....	35
To prepare self for better farming and community citizenship.....	48
A better opportunity for meeting the public in the store business.....	3
Appreciates working with farmers.....	9
Like to continue in agricultural schooling	17
To be rural doctors in West Virginia	3
To be country preacher.....	1
No influence from F.F.A. leadership	11
Did not answer that part of the questionnaire	56

Attending College

A group of twenty-three persons were attending non-agricultural colleges (5.06 per cent of total) and forty were attending agricultural colleges (8.80 per cent of total). The larger per cent of those attending college were in agriculture.

A group of seventeen high school students who had just received the State Farmer Degree were planning to attend college. Fifty-two young men of West Virginia were awarded the State Farmer Degree during 1948. These degrees made up 32.69 per cent of the total awards given for the year. The graduates indicated intentions to attend agricultural colleges.

Conducting a welding workshop

(Continued from Page 172)

items in our shops that several years ago would have seemed impossible. The teachers now construct farm wagons and car trailers, hard surface plow points, and do many other jobs necessary for the local community.

To summarize briefly, in conducting a gas or electric welding work shop the following is suggested:

1. Contact your local welding representative and request him to secure a specialist from the welding company servicing your area.
2. Notify each teacher to provide his own complete welding and cutting equipment including coveralls, gloves, goggles, and a good assortment of fluxes and rods.

Some of those attending non-agricultural colleges said their F.F.A. leadership training had inspired them to choose the occupation for which they were preparing. They were in the following fields of study: Engineering, Chemistry, Geology, Forestry, Medicine and Law.

A total of eighty State and American Farmers were attending college or had anticipated doing so. This number represents 17.6 per cent of the State Farmers and 5.76 per cent of the American Farmers.

Conclusion

Many of those who had worked so diligently to attain the highest goals in F.F.A. have continued to work toward a progressive enterprise in agriculture. Progress may be understood better by viewing the facts. Fifteen State Farmer Degrees were awarded in 1936 and fifty-two in 1948.

Land ownership has been a big obstacle in becoming established. Thirty per cent of the State Farmers and forty-six per cent of the American Farmers have completed that phase of establishment. Those State Farmers (46 per cent) and American Farmers (42 per cent) who are working in partnership with relatives may be considered as future farm owners, at least they are in a desirable position for future land ownership. Financial and other obligations seem to prolong the period of non-ownership. Times of uncertainty, as that of depression and war, have had a retarding influence toward continuous progress. During these times some farms were sold while others sold only their livestock and machinery.

Leadership through F.F.A. has been a great inspiration. Many have gone into activities associated with rural living while others have been inspired to associate themselves with non-farm activities.

Those areas in West Virginia where agricultural production is high have produced more State and American Farmers. Land fertility, topography, and crop intensification seem to favor an enterprise that meets the minimum requirements.

3. Provide each teacher with his own work station where he can actually weld.
4. Secure a building with sufficient floor space, proper lighting, and ventilation to carry away heat and fumes.
5. Keep several CO₂ Fire Extinguishers on hand.
6. Supply an adequate amount of scrap plate for welding and cutting and broken items of different metals such as cast iron, steel, malleable iron, die cast, and aluminum.
7. Invite not more than fifteen vocational agriculture teachers to receive the instruction at each clinic. Too large a group makes instruction difficult.

Helping teachers meet needs in teaching farm mechanics

GEORGE W. WIEGERS, JR., Teacher Education, University of Tennessee



George W. Wieggers

"WE need more instruction in farm mechanics," was the expression of Tennessee teachers of vocational agriculture in various meetings early in 1950. Many of the teachers knew they did not possess sufficient skill to teach some of the common farm mechanics jobs as they would like to teach them. Some of the teachers did not teach skills they knew should be taught because they themselves did not know how to do them.

A survey was conducted by a member of the agricultural education staff and the district supervisors to determine what skills teachers wanted to develop or further develop. It was decided that the skills teachers wanted would form the framework of a skills course. An outcome of this decision was that two agricultural engineers designed a skills course built upon the expressed needs of the teachers.

In the spring of 1950, J. F. Scarbrough, Jr.,¹ a graduate student, conducted a study to determine the farm mechanics situation in one hundred forty-nine departments of vocational agriculture distributed throughout the state. This study revealed that teachers were also in need of instruction in planning, conducting and evaluating their farm mechanics programs. On the basis of Scarbrough's study, expressions from teachers, supervisors and members of the agricultural education staff, it was decided that a methods course should be made available to teachers which would run concurrently with the skills course. Another decision reached was that each teacher would be followed up on the job by the instructor following the completion of the methods course.

Many of the teachers were enthusiastic about the possibility of the State Department of Education, College of Agriculture and College of Education teaming together to offer such courses, but felt that they could not leave their local communities or could not afford to leave their families to go to the university to receive the instruction. In order to further help the teachers it was decided to offer instruction where most of the teachers desiring to attend could drive from their homes to participate in the courses.

During the first summer quarter the

university provided for two agricultural engineers and one teacher educator to conduct the courses approximately three hundred and fifty miles from the campus. The instructors spent three weeks with forty-seven teachers of vocational agriculture in West Tennessee. The forty-seven men were divided into four sections in the agricultural engineering course and into two sections in the agricultural education course. During the second summer quarter the same courses were repeated in East Tennessee at the university with twenty-six regular teachers of vocational agriculture and three on-campus graduate students in attendance. Approximately thirty per cent of all the white teachers of vocational agriculture were reached.

Each teacher was awarded three quarter hours graduate credit for satisfactorily completing the skills course and one and one-half hours graduate credit for satisfactorily completing the group methods course. Each teacher will also receive an additional one and one-half hours credit for developing a satisfactory plan of action for his own program while on the job.

The remainder of this presentation is concerned with the course offered entitled *Methods in Planning, Conducting and Evaluating a Farm Mechanics Program*.

Determining the Course Content

All teachers have been faced with the problem of what to teach. College instructors face this problem just the same as do teachers of vocational agriculture. This problem was partially solved by following an educational principle common to all engaged in teaching vocational agriculture. The principle that students should have an active part in determining their course content was used as a basic guide.

Each teacher pre-enrolling in the course was given an opportunity before meeting for organized instruction to express his needs in terms of problems needing a solution. To secure these problems the instructor followed definite steps. The various educational aspects of farm mechanics were analyzed into twenty-one responsibilities (could be expressed as units or jobs). These responsibilities were used as the framework for an information blank. Spaces were provided under each responsibility for each teacher to list problems and concerns which were considered felt difficulties to him. Since certain limitations were placed on the course, such as limiting the organized part of the course to three weeks, the teachers were asked to select ten of the twenty-one responsibilities to which they would give the highest priority for study and discussion. Table I shows priority fre-

quencies and the per cent of teachers selecting each responsibility as one of the ten most important to them.

Setting Up Course Syllabus

The data in Table I show that each responsibility was selected by at least one-fifth of the teachers as one of ten most important to them. No two teachers selecting the same responsibility as important had identical problems.

TABLE I. Farm Mechanics Responsibilities Selected for Study by Seventy-five Tennessee Teachers of Vocational Agriculture.

Responsibility	Frequency ¹	Per Cent
Setting up a course of study	73	97
Organizing farm shop for instruction	61	81
Determining scope and content	59	80
Preparing teaching plans	54	72
Financing a program	51	68
Providing facilities	51	68
Directing learning activities (teaching)	43	57
Scheduling learning activities	41	55
Providing for safety	38	51
Managing a program	35	47
Providing instruction for adult farmers	35	47
Providing instruction for veterans	29	39
Scheduling the total program	29	39
Framing a sound and workable philosophy	27	36
Designing, constructing and/or remodeling farm shop buildings	18	24
Keeping records	18	24
Developing home farm shops	17	23
Providing instruction for young farmers	17	23
Promoting instruction in the community	17	23
Evaluating instruction	17	23
Providing on-farm instruction	15	20

¹Each frequency represents one of the ten responsibilities selected for study by each teacher during the three weeks course.

²Includes equipment, tools and supplies.

³Includes scheduling small group activities.

⁴Includes aspects of managing a program not included in other responsibilities.

On the basis of the facts brought into focus through the information blank the instructor developed a course syllabus or working outline. Each responsibility was written on a separate sheet of paper and under each were listed the problems and concerns submitted by the teachers. In many cases the teacher stated the same problem in different ways. Some stated their problems in a general way while others were very specific.

It was decided since at least one-fifth of the teachers were concerned with each responsibility that the syllabus should contain pressing problems and concerns for all the responsibilities.

(Continued on Page 185)

¹J. F. Scarbrough, Jr., *Survey of the Farm Mechanics Program in Tennessee*, Non-theas study, 1950, University of Tennessee, Agricultural Education Department, Knoxville.

Making reports useful

—J. C. ATHERTON, Teacher, University of Arkansas



J. C. Atherton

IN the development of local programs the teacher of vocational agriculture is required to keep and submit numerous reports on the various activities he is carrying out. That we shall be compelled to continue submitting reports seems to be a foregone conclusion;

however, we may not find so obvious the values that may be attained through the effective use of these reports. During a recent visit to the office of Mr. T. A. White, District Supervisor of Vocational Agriculture for the Southeast District in Arkansas, I observed considerable effort being exhibited in the use of reports as a means of building better community programs of vocational agriculture.

Mr. White has prepared two summaries of activities of all teachers of vocational agriculture in his district and has furnished copies of these summaries to each of the teachers. One of these studies is entitled "Studies Made From 1949-1950 Reports." This report has the following subdivisions:

At the end of the study the district totals and the district averages are shown.

The second study is entitled "District Summary of Monthly Number 3 Reports of Instructors in Vocational Agricultural Education for the Year Ending June 30, 1950." This summary has the following subdivisions:

Name of School	Total Hours Teaching Activities	Total Hours Devoted to Other Prof. Services	Mileage for Official Use	No. of Farmers Served in Pers. & Community Services	FFA Meetings		Other Group Meetings	
					Number Meetings Held	Number Attending	Number Group Meetings Held	Number Attending

Totals and averages are also given at the end of this summary.

With this information, each teacher of agriculture is able to see how he compares with his fellow teachers on the items covered in the summaries and also whether he ranks above or below average on each of these activities. Mr. White has suggested that each teacher compare his activities with those of Vocational Division Bulletin No. 240, *An Evaluation of Local Programs of Vocational Education in Agriculture*, as a method of rating himself.

This material is used for self-evaluation.

Name of School	Avg. No. Prod. Enterprises	Number All-Day Enrollment	Number All-Day Classes	Number Young and Adult Classes	Young and Adult Enrollment	Number Visits to All-Day Boys	Number Reports Late in 12 Mos.	Total days overdue on reports
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district supervisor, a basis for determining new goals, and a means for observing improvement in the individual programs over a period of years. With this information, the teachers of the district are enabled to make a comprehensive study of their programs and to arrive at decisions relative to the areas in which additional effort is needed.

Other useful information which may be obtained from the reports might include production or yield per acre or animal unit, net income per acre or animal unit, scope of enterprises, type tion, as a basis for conferences with the

of enterprises, number of supplementary farm jobs, and the number and types of improvement projects conducted.

Also, the results of the study by Mr. White might be portrayed in other ways so that certain features would be highlighted. For example, in setting goals for visitation to all-day boys the following information would be useful: The median number of visits made, the range in number of visits by those in the upper fourth of the group, the range in number of visits of those in the lower fourth of the group, the range in the number of visits by all teachers, and the average number of visits per all-day boy.

It seems that there is much that might be done to change report making from a required chore to a satisfactory means of program building.

A Challenge

F. A. NYLUND, Teacher Education, North Carolina State College

THE teaching of agriculture in our high schools today is a very difficult job. A school administrator realizes this fact, and when he puts in a call for a teacher of agriculture he wants the best man available for the position which is open. He knows that there is a challenging man-sized job to be done. In fact, there is usually more work than one man can do.

Departments of agriculture are often dropped due to the work of inferior teachers and because of inferior or indifferent programs. Some teachers leave the field because they realize that they are unsuccessful in doing the job that is expected of them. Many hang on to their positions but contribute very little to individual and community development.

A successful teacher of agriculture realizes that he has a responsibility to his school, to his community, and to his profession. In preparing for this respon-

sibility, he must develop the understanding, the insight, the qualities of leadership, and the unselfish courage necessary to exercise real leadership on all occasions. He must recognize that vocational education in agriculture is designed to meet the needs of high school students preparing for farming, out-of-school young men who are establishing themselves in farming, and for adult farmers who are improving themselves in specific phases of farming. Instruction for these three groups comes within the scope of the program of a teacher of vocational agriculture. The difference in age, maturity, experience, interest, and immediate needs of the three groups must be considered in developing effective teaching to meet the needs of the individuals in the respective groups. Since vocational education in agriculture is concerned with the development of effective abilities, such education must be con-

cerned with discovering the activities and problems with which students are confronted when developing their proficiency in farming.

Students of vocational agriculture and members of local chapters of Future Farmers of America must participate in many activities which become a basis for developing their ability in agriculture. Real problems are encountered by them in selecting and purchasing breeding stock, certified seed, feeder calves, and supplies for their farming programs, and in selling such products as poultry, livestock and grain.

Instruction, to be effective, must go beyond an appreciation and understanding of a problem. It must be carried to the point where the individuals have developed effective ability to solve those problems. These different abilities are developed in situations where something needs to be done; where the learner has a part in selecting and evaluating information, in making decisions, and in formulating and executing plans.

Your job as teacher, therefore will be to train farmers and prospective farmers for a successful life in farming. Our program is vocational education in agriculture. We know what should be done. The question is—are you prepared to meet the challenge?

Helping teachers meet needs

(Continued from Page 183)

From the master list of problems selections were made to be included in the syllabus. In certain cases the instructor supplemented the list by adding problems and concerns for study and discussion. Observations and situations revealed in Scarbrough's study made it feasible to make the supplements.

After the problems and concerns were listed references were selected which would be of value in reaching decisions. In some cases materials were developed because the references available did not contain the necessary information. Other solutions to problems could be found only in the teaching of farm mechanics. The sources of references used consisted of magazine articles, materials developed and used by other states, books, and other sources.

In order to provide the teachers with up-to-date content the instructor wrote supervisors, teacher educators, and agricultural engineers in every state requesting certain materials which would help enrich the course. Responses were received from individuals in two-thirds of the states and of those responding approximately one-half sent materials developed and used in their respective states. The materials received helped solve many of the teachers' problems which were identified during the course. In return, materials developed during the course were made available to those responding to the request by letter and/or materials.

Conducting the Course

The course was begun by starting with solving problems in the responsibility "farming a sound and workable philosophy of farm mechanics." This responsibility was not given high priority rating, as shown in Table I, by the teachers, but the instructor felt that a foundation should be built and all teachers should have a common point of departure. Beyond this responsibility the teachers' selections determined the course of action. All of the responsibilities were not studied because of the time limitation. Some of the responsibilities studied in East Tennessee were not the same as those studied in West Tennessee because of differences in expressed needs.

References were provided for all responsibilities because some teachers had problems needing solution which were not common to the group. The instructor also held individual conferences with teachers needing assistance which was not provided for in the group discussions.

Some of the activities engaged in by the teachers while participating in the two sections of the course conducted in West Tennessee and the one section at the university were:

1. Analysis and interpretation of data pertaining to farm mechanics.
2. Study of magazine articles, books, materials developed by other states, visual aids and other materials.
3. Discussions and reaching of decisions to problems identified.

4. Presentation to the group of materials used by a teacher or teachers.
5. Presentation of plans of action by some teachers.
6. Development of materials to be used by teachers on the job.
7. Reports by some teachers.
8. Field trips to study present shop organizations (a revised plan evolved from the group in each case).
9. Practice in tabulating a survey.
10. Presentation of selected tape recordings.

Following Up Participants

If following up individuals participating in a program of vocational agriculture is sound education why should it not be sound on the graduate level? The staff of the agricultural education department is carrying the above principle to the doing level. Funds and time have been provided for the instructor to render individual assistance in each teacher's department. Plans have been made for the instructor to be in each department at least once after the participant has completed the organized instruction. During this time each teacher is to prepare a rather complete plan of action for his program. At this writing four out of every five have been visited.

The major function of the instructor is to render each teacher assistance in planning, conducting, and evaluating his farm mechanics program. The three major areas in which teachers are vitally concerned are: (1) shop reorganization, (2) developing a sound and workable course of study, and (3) directing small group learning activities. During these instructional visits various decisions are reached relative to specific problems in hand, various guiding principles re-emphasized, local situation re-analyzed, materials suggested to help solve problems, and ideas and practices are transferred from one department to another.

Determining Some Results

A course offered should produce desirable changes in participants and the conditions in which they work. It is however, rather difficult to determine precisely the relationships which exist between instruction and changes observed in both the individual and the conditions in which he works, because changes are usually the product of many variables.

Plans are being made to determine whether some of the changes are in part a result of instruction. Some teachers have already described their practices and conditions before taking the course and have stated their present practices. Some of the conditions changed can be observed during the follow-up.

A systematic study will probably be made within one year following the completion of the course. One of several kinds of evaluative methods could be used to determine changes. One of these could be used:

1. External criteria or the do-you-do-this method.

Problem solving procedures in teaching agriculture

KENNETH J. LIGGETT, Teacher
Newbury, Vermont

EFFECTIVE methods of teaching the many and varied subjects which fall into our courses are the headache of every vocational agricultural teacher. One of the more effective methods, and one of the hardest to master, is the problem solving method.

Problems, to be really effective, must concern the individual student, and to do this they must arise from the Supervised Farming Projects which the students are carrying on as part of their agricultural program. Because of the number and variety of the Supervised Farming Projects, a teacher may have difficulty in selecting those problems which will be of interest, and use, to all the students in the class. Many problems will have to be solved through individual instruction and conference, those that are used for class instruction will have to be handled in such a manner as to be interesting to each member of the class whether they concern his particular type of farming project or not.

There are many farm management problems which can be anticipated, and the teacher can set up hypothetical situations whereby the lesson can be taught. This type of problem, although it may be instructive, is not as effective as the problems which the students encounter on their home farms and bring to the teacher for help and guidance.

In solving problems of first and foremost importance is a thorough understanding of what the problem is. Many problems, which the students bring to you, will actually be several small problems which can be isolated and handled separately to greater advantage. After a thorough understanding of what the problem is has been reached by the teacher and students the next step is to determine the cause or causes. This may be done in several ways, but if the problem has been presented by one of the students it may be best to arrange a field trip to his farm so that all of the students may get first-hand knowledge of the situation. Before going to the farm briefly explain what one might expect to find on the farm and then have each individual make a list of all contributing factors which he finds on the

(Continued on Page 186)

2. Participant opinion or the what-do-you-think method.
3. Within group changes or the before and after method.
4. Between group changes or the what's-the-difference between groups method.

An analysis and interpretation of the data should be of value in further improving instruction of the teachers who participated, and as a guide to further instruction. It is hoped that observations and study will justify continuing such a program in the state.

Give them the facts

—A plea for making information available to the people

PAUL F. SPRAGGS, Teacher, Halifax, Virginia

KEEPING the public informed of the activities and programs of the agriculture department of the local high school is a definite and challenging responsibility of the teacher of vocational agriculture. The success of the department often hinges upon the degree to which the program is understood by the superintendent, principal, members of the faculty, pupils and patrons of the community.

Teachers of vocational agriculture must realize that many so called "bad relationships" among principals and themselves can be traced to ignorance of the total program of vocational agriculture. Likewise, they must realize that in many localities amiable, cooperative teachers of vocational agriculture, who find it easy to get-a-long with school administrators, are experiencing difficulties in developing worthwhile programs. Overburdened with school activities—bus duties, supervisory functions, coaching and whatnot—they are unable to set up adequate all-day, young farmer and adult farmer classes. This is not commendable.

Needed To Build Total Program

That a satisfactory total program of vocational agriculture has not been developed in all our schools offering the course is worthy of much consideration, especially if this has been due even to a small extent to inadequate public information. Vocational agriculture has much to offer rural America in helping to achieve fullest development of all youth. This the teacher of vocational agriculture must keep ever before the public.

The question may be asked—how can the teacher of vocational agriculture help in achieving good relationship with the public for his department through information? This may be accomplished, among other ways, by keeping school administrators, teachers, pupils and patrons aware of their agricultural needs and by assisting in alleviating the situation. This is a large job and requires research, tact and ability, for many teachers and administrators know little about the agricultural program of their school.

The teacher of agriculture makes surveys of the farm conditions of his school community to enable him to develop an adequate teaching program. It would be prudent of him if he would make available his findings to all teachers of the school. He should, through conferences, talks, meetings and discussions explain to school administrators how his department can and is meeting community needs; how, with cooperation, his services may be further extended. It is hardly conceivable that any administrator after considering facts as to the needs of his community and being shown that his department of vocational

agriculture may help in solving them without any greater outlays of money would not offer his fullest support of the program. Likewise, it is incredible that any principal after being acquainted with the needs for young farmer and adult classes and of the contributions such classes may make to the entire school program, would hesitate in allowing his teacher of agriculture the opportunity to develop such classes. Principals, responsible for the entire school program, usually want to know the "whys." That is as it should be. Given the "whys," their cooperation is nearly always immediate.

Interest Of Other Teachers

Besides the principal and other administrators, academic teachers must be shown the values of the program in vocational agriculture. If this is not done, jealousies spring up and flourish. To many such teachers, the supervising of farming practices means nothing. The time spent by the teacher visiting boys to supervise their projects is, to these teachers way of thinking, time wasted riding up and down the highways. This erroneous opinion can and must be corrected. Indeed, it should not be allowed to be formed. This can be done through information—acquainting teachers with the objectives of vocational agriculture and the manner by which these may be reached.

Aside from keeping school administrators and teachers cognizant of the role of vocational agriculture and of how the local school is preparing and meeting community problems, the teacher of vocational agriculture must likewise keep patrons informed. They are taxpayers and their support of the school, and the department's program, is imperative if it is to grow to its rich status and meaningfulness in the community.

In informing patrons, the teacher has many forms of media with which to convey information about his program. Through news articles, radio announcements and programs, talks to individuals and groups, farm visitations, personal letters and advisory council activities, he may reach the greater number of his constituents. He should tell them over and over of the meaning and worth of his program, N.F.A. or F.F.A. activities, special classes, and of his needs if he is to conduct an ever increasingly meaningful program. To perform this skillfully, the teacher may do well to become better informed as to the usage of the many types of news media. Skill in writing news articles and radio skits is invaluable.

Pupils Too!

Pupils have a right to know all there is to be known about the agriculture department of their school and its offerings. It is the teacher who must keep them informed. This he can achieve

through discussions with them, through prevocational training, through visitations and counseling, and through N.F.A. and F.F.A. activities and student publications. Unless informed, pupils cannot be expected to make maximum progress in vocational agriculture, nor can they be expected to continue in young farmer classes after graduation; and if ignorant of the wide scope of the program, they cannot be expected to contribute to the perpetuation of vocational agriculture in our rural schools.

Only by keeping the public informed of the services of his department, and of how that department is meeting the pressing problem sapping the energies of the people, can a teacher hope to create good and enduring public relations and establish friends for the school—friends who will do much to see that vocational agriculture is continued as an integral part of the program in the rural secondary schools of tomorrow.

Problem solving procedures in teaching agriculture

(Continued from Page 185)

trip which might, in some way, affect the situation.

Upon returning to the department make a comprehensive list of the factors found by the boys and have them use this list as a basis for some research work as to the probable cause of the resulting problem. After sufficient research has been done a round-table or panel discussion could be used very effectively to determine the cause and resulting effects.

After the probable cause of the problem has been discovered, the next step is to find effective corrective measures. Here again research is necessary and the results may be discussed either by a panel or by the group as a whole. Whenever a panel or a group discussion is used one or two members of the class should be appointed to make suitable summaries of the discussion and make concrete suggestions for correcting the existing problem.

Whenever possible problems should be anticipated and hypothetical situations set up with the result that instead of corrective measures being the goal of the research, the goal would be preventive measures which could be carried out before a serious situation arose.

Each problem which arises will be a challenge to the teacher and will arouse a desire in the teacher to meet the challenge with the most effective method of solving it. As each problem depends upon the individual situation, there is no definite pattern which can be followed in solving them. However, there are four things which should always be considered. These are:

1. The cause.
2. The resulting problem.
3. Preventive measures which might have been carried out.
4. Corrective measures to use after the problem has arisen.



Leadman, Don Burfitt, demonstrates the F.F.A. tractor with grader. These leadmen play an important part in the Edmonds F.F.A. Machinery program.

► ► ► Custom work ◀ ◀ ◀ with F.F.A. farm machinery

HAROLD E. SILVERNAIL, Teacher, Edmonds, Washington

WHY do many F.F.A. chapters own and operate farming machinery? Does farm machinery contribute to the learning situation? Is it practical for chapters to own and operate farm equipment? It is worth the time, effort and risk for F.F.A. chapters to purchase and use tractors, trucks and other farm machinery in conjunction with the high school program? How can chapter-owned equipment be financed? How can an instructor exercise the necessary control over a program that includes the purchase, maintenance, and operation of farm machinery as a part of the laboratory program in agriculture? These are some of the questions and problems that every instructor and school administrator must answer in regard to the agricultural education and F.F.A. program which includes the purchase, operation and care of farm machinery as a part of the vocational curriculum.

Is farm machinery necessary for a top-notch program? This question must be answered in every local district. It is reasonable to expect that any local instruction should first reflect the type of agriculture in that area. In line with the accepted definition of vocational education and also the progress of agriculture on our American farms, farm machinery used as laboratory equipment in our schools is as indispensable as modern machinery on our nation's farms. In fact, farm machinery serves the educational institutions as effectively as it does the farmer. A new tractor, combine harvester or truck not only helps the farmer do a better job mechanically, but it actually stimulates him so that he goes about his work with

more vim and vigor, thus making his tasks more pleasant and life more happy. To the student in school the same reaction occurs. A new chapter-owned tractor or truck is a tremendous stimulus to boys. It brightens their school hours, gives them something to talk about, study and operate. It teaches the F.F.A. boy modern farming methods and in many cases encourages him to stay in school and finish his education. Machinery provides the physical means to *learn by doing*—the interesting and efficient means of learning. What more could be asked of a teaching device? To justify chapter or school-owned machinery, educationally, is not a problem. The big job is to learn how to manage this equipment justly, safely, and economically with educational values in view.

Purchasing Machinery

Obtaining good farming equipment sometimes is a big problem. Some schools provide their departments with such equipment as is necessary to maintain high standards in agriculture teaching. Other chapters find it necessary to use various money-making schemes in order to finance the purchase of machinery. The replacement of worn and unsafe machinery is also a problem if it is left to the chapters to finance. When custom work is used as a combined source of money-making and laboratory experience to teach the operation of machinery, the management problems are more difficult. The chief advantages of F.F.A. chapters of F.F.A. cooperatives owning their own machinery as compared to school-owned equipment are the stimulus and pride that comes

from ownership and the responsibility, established in chapter meetings, that goes with the democratic control over the machinery.

Most farm equipment dealers are willing to cooperate with schools in giving discounts on machinery purchased. Some dealers even carry accounts until complete payment can be made. Instructors will be wise to always insist on a sound purchase plan through a bank or other finance agency so they will not become the "goat" in case critical financial problems arise. Every teacher should also insist that both boys and machinery be insured and that only safe equipment be used in an educational program.

Management

In order to provide an educationally sound program with farm machinery, cooperation with school administration is a *must*. Be sure that the entire faculty and administration are informed of your program. If this is properly executed it is possible for other teachers to take advantage of the agriculture students' experiences in their classes. An English teacher may accept a paper written on "How I Learned to Plow with Our F.F.A. Tractor." Perhaps the speech class could hear of the same experience orally. Faculty sympathy to the program comes through cooperation and information.

At Edmonds we have devised a means of managing the farm equipment program that meets the favor of most all concerned. We have an arrangement with faculty and administration so that boys may be excused from all classes while working with the F.F.A. equipment away from the school. Boys may be excused for this type of class-work not more than once in a two-week period and then only if the student has been present in school every day during the two weeks prior to his being excused. He must also be doing passing work in all of his classes. By conforming to these standards, we have experienced very little faculty or student criticism. We find this program stimulates better work in all classes. In order to check student work in other classes the regular athletic-type-eligibility sheet is circulated among the teachers. Attendance records are kept.

As for managing the farm machinery from the department's standpoint, we find that a classroom study unit on maintenance and operation of all equipment at the beginning of the freshman year is most helpful. This unit is reviewed in each class at the beginning of each new school year. In this unit the equipment is thoroughly studied and discussed, and standards for operation and care are developed. This is followed by field demonstrations where the important items are again emphasized. After a student passes a written examination he is ready to be placed on the daily schedule for custom work.

All school people know that it is impossible for teachers to continuously leave classes to teach and supervise the machinery working away from the school. In order to avoid this situation we have twenty boys especially adept

(Continued on Page 190)

Young Farmer programs*

FRED SANDERS, President Mississippi Y.F.A.

MUCH has been said and written recently of the great number of rural young people who have left the farms to seek employment in towns and cities. It might interest you to learn, however, that I happen to be one of those seemingly rarer individuals who left the town for life on the farm.

Possibly because of this fact it was never my good fortune to receive training in vocational agriculture while in high school. My first real experience in farming began at the age of 15 when I left home to work as a hired hand in another part of the state. This was later followed by jobs in the construction and the machinery fields.

However, I have come to value very highly my instruction in vocational agriculture since becoming a trainee in the veterans agricultural training program. This has made it possible for me to acquire a farm of my own, upon which I am now in the process of building a home.

The young farmer organization in Mississippi is at present composed largely of veteran farm trainees. Our state association, which is still less than a year old, was a direct outgrowth of many trainee groups and classes forming local young farmer organizations within their school districts.

Although we have adopted the term "young farmer" in our association name, in reality there is no maximum age limit. The constitution provides that any "young farmer," 16 years of age or older, who is out of school and enrolled for organized systematic instruction in a young farmer class, is eligible to become an active member . . . "upon receiving a majority vote of the members at any local organization meeting." Once a member, an individual must continue in good standing by attending class and local organization meetings regularly.

Since the bulk of our present membership does come from veteran classes in vocational agriculture, the educational objectives of the organization are relatively simple to meet. Most local groups also include some type of educational feature in their regular organization meetings which, of course, are held separate from scheduled class sessions. Here is one place that committee work is used to great advantage. Program education and recreation committees, to mention but a few, find many opportunities to function in planning these meetings.

At the present time we have about 1000 active members in the state young farmer association. This figure does not include, however, the estimated 3000 members of local organizations who have not affiliated with the Mississippi Association of Young Farmers. It is the programs of the former group with which I am most familiar and which I shall attempt to describe briefly.

A number of local organizations are carrying on some very worthwhile programs which have merited and received considerable support from community leaders. My own local young farmer group has managed to acquire a long-time lease to six acres of land situated near the center of the county's principal town. Under the direction of a community projects committee, and with business people contributing materials, young farmers are providing the labor to construct a "Farmers' Center," complete with parking space, lounging rooms and playground equipment. It is hoped that the project can eventually be expanded to include marketing facilities for farm products. Use of all these facilities will be available free only to farmers and their families.

Another live-wire group recently received the attention of national Boy Scout leaders when it sponsored the formation of four troops of Rural Scouts in the school district. A troop committee, composed of young farmers, was appointed to work with parents and community leaders in getting the project underway. Scoutmasters are all young farmers. Troop meetings are held regularly, with the troop committee still functioning as a sponsoring body, lending assistance whenever it can.

Cooperation is an important part of nearly every young farmer program. I think it is encouraging to note that in many cases the young farmer organization has served to strengthen the local farmer cooperative. In my own county the president and three directors of the local purchasing and marketing cooperative are young farmer members—all elected after the young farmer organization was formed. We encourage our members to first seek the services of all existing farm organizations and agencies before setting up parallel programs of their own.

Due to the fact that as a state association we are still less than a year old, I cannot point to a large number of state-wide projects that we have sponsored. However, I would like to relate one program which has gained remarkable attention throughout Mississippi in a very short time. Like nearly every southern state, Mississippi has made tremendous strides in increasing its yields of corn per acre. In 1949, nearly 1200 vocational agriculture students in the state made 100 bushels of corn on at least one acre. Approximately 75 per cent of these students were veteran farm trainees. This accomplishment was celebrated last November by a gigantic Corn Production Achievement Rally in the state's capital city and was attended by more than 3,000 young farmers and F.F.A. members.

Because of the success of this event, and also because young farmers were by far the largest group involved, we set up in our 1950 Program of Work to assist the State Vocational Education Division in staging a Mississippi Farm

Achievement Day sometime late this year. With the help of vocational agriculture workers we worked out standards for measuring achievements in corn, cotton, pastures, forestry and livestock enterprises. Some \$10,000 worth of prizes, including four tractors, have been obtained from commercial firms and farm organizations as incentive awards to the highest producers in each division. We hope to have at least 5,000 farmers at this rally. Every farmer and F.F.A. member who meets the minimum production standard for any one of the enterprise divisions will receive a certificate of recognition and commendation signed by the Governor and other high state officials.

Although the young farmer program in Mississippi has been closely related to the veteran farm training program up to this time, I believe that it will be one of the biggest factors in promoting young farmer classes in the years to come. As young farmers we now know and appreciate the value of vocational agricultural education and realize that this is perhaps the best means whereby we can continue our training in modern farming. If properly guided, I see no reason why the young farmer phase of vocational agriculture cannot, in time, become the strongest educational program carried on in our local communities.

Developing individual plans for farming

(Continued from Page 177)

plans for farming should not be difficult with any interested group of boys. It seems apparent that there may need to be:

1. Carefully launched or initiated programs of supervised farming.
2. A desire to build broad supervised farming programs to meet individual needs as related to the accepted farm improvement objectives for given situations.
3. A determination to not teach "ahead of the farm improvement objectives" of a group of boys, as emphasized by one of our state leaders for several years.
4. A distinct change in the allotment of time between individual and group instruction. Individual instruction (or planning) requires time to develop several types of plans simultaneously.
5. A recognition that boys should be given an opportunity to plan like farmers plan their problems rather than wasting time in drawing up general, common or uniform plans.

E. R. HOSKINS, *Teacher Education*,
Cornell University

Record purchases of farm machinery and motor vehicles by farmers in 1949 brought their total investments in these assets up to 14.3 billion dollars on January 1, 1950. During the year, farmers bought machinery and motor vehicles valued at 3.9 billion dollars, compared with purchases of 3.4 billion dollars in 1948.

*Talk given at Stillwater, Oklahoma, August, 1950 at 22nd meeting of American Institute of Cooperation, Symposium of Young Farmer Programs.

Educational programs for young farmers*

R. E. NAUGHER, Program Planning, U. S. Office of Education



R. E. Naugher

AT the time of the passage by Congress of the Smith-Hughes Act in 1917, practically our entire educational system, all the way from the grammar school to the college, was engaged almost exclusively in providing training of an academic character, adapted to what was conceived to be the requirements of the liberal arts or professional education. However, a study of the occupations of our people show that slightly less than seven per cent of our population ever enter professional employment. This includes the profession of teaching school, beauty culture, and a number of other professions filled almost entirely by women and means that probably less than four per cent of the men are professionally employed. Nevertheless, this sort of education was, until about 30 years ago, the only kind that was made available in public secondary schools.

Education and Our Economy

The great mass of our population representing the other 93 per cent of our boys and girls had no opportunity to get the sort of training that they needed to fit them for their particular needs in the role they must of necessity occupy in our economic and industrial life. No one will contend that there is a less need for general academic education, but rather we should consider the need for more ample provision for education specifically adapted to meet the vocational needs of the 93 per cent of our population who produce our food, our clothing, and our shelter. It is this 93 per cent that build our schools, our factories, our homes, our roads and our public buildings. They perform many additional activities that caused the wheels of industry and agriculture to turn at record production during and immediately following World War II. In normal times it is this group that contribute most to our daily needs and comforts.

Largely because of the situation outlined above, provisions were made in the first Vocational Education Act and in subsequent acts, for educational programs for those who have entered upon the business of farming as well as for those who are preparing to enter such business. A functional program in agricultural education must include organized instruction for: (1) out-of-school young men who are farming; (2) established farmers; and (3) in-school farm boys who are over 14 years of age.

Instruction for young farmers must be planned and designed to meet the

educational needs of young men who are establishing themselves in farming. It is essential that the program be flexible enough to meet the instructional needs of such individuals with varying educational attainments and farming experiences. Establishment in farming is the main objective in the educational program for young farmers. A number of activities in addition to producing crops and livestock contribute to the educational program of these young men. Some of the contributory activities included in many of the programs now in operation are:

1. The development of individual and group interests and abilities in financing, planning, operating and evaluating farming programs of out-of-school young farmers who are members of the group.
2. The discovery and utilization of placement opportunities available in the community on a rental, lease, partnership and purchase basis in assisting young men to become established in farming.
3. The development of leadership abilities needed to participate in activities requiring an understanding of parliamentary procedures, conduct of meetings, public speaking, and other desirable activities for rural young people.
4. The development of an understanding of the way to secure and utilize the services available to farmers in improving their economic status and social and family relations.
5. The development of abilities in marketing and utilizing farm products; conserving water, soil, and other natural resources; financing and managing a farm business; maintaining and operating farm machinery and equipment; maintaining and improving the farmstead; applying farm work simplification practices; and improving farm family living situations.

It is much more difficult for a young man to become established in farming today than it was 50 years or even 25 years ago. Competition for good land is much keener. Land, livestock, labor, equipment and other necessary costs are much higher. Therefore, young men who enter the business of farming must be prepared and trained to meet this keen competition. The contributory activities added to the production practices pertaining to crops and livestock as listed above make for a well-rounded program in preparing young men to farm and to take their places as leaders in the community. This training cannot be attained by attending a two- or three-week intensive short course; nor can it be attained in one year. Young farmers should insist that in communities where departments of vocational agriculture are located a program be provided for them that is flexible enough to include the problems they have in becoming

H. H. Gibson, teacher trainer in Oregon, retires

GLEN L. WEAVER, State Department of Education, Oregon

AN impressive farewell address by H. H. "Prof" Gibson, who is retiring, was a highlight that will long be remembered by nearly 200 vocational agriculture and institution on-farm instructors attending the annual conference held at the Tillamook Airbase the first week in August. In recognition of his many years of service in agricultural education in Oregon the group presented him with an Argus C-47 camera.



H. H. Gibson

Prior to graduating from Denison University in Ohio in 1909 with an A.B. degree, Mr. Gibson had grown up on an Ohio farm and had taught in rural schools there. During the next three years he was a graduate student at Columbia University while employed part-time as director of work for men

(Continued on Page 191)

established on the farm and in the community. In order to do this, instruction must be provided on a seasonal basis and over a period of years. In addition, the instruction must be followed up on the home farm to help the individual apply the group instruction to local farm conditions.

As far as America is concerned, we are no longer confronted with the problem of making two blades of grass grow where but one grew before. This idea now may be regarded as elementary to the problem. Conservation of fertility, utilization of waste and by-products, diversification of crops, transportation and marketing are all among the fundamentals of agriculture with which the farmer of tomorrow must be intimately familiar, and these are principles in the science of agriculture which affect every citizen in the republic, for upon their successful solution depends on a large part the prosperity of the nation as a whole.

*Speech given at Stillwater, Oklahoma, August, 1950.

Changes in staff

A NUMBER of changes in staff of Special Editors has been made. Retirements are Cline, Nichols, and Lawson. New appointments are Coggin, Knuti and Sweany.

Leo L. Knuti, Professor of Agricultural Education at Montana State College will serve as the Second Special Editor for that region. H. Paul Sweany of Michigan State replaces Lawson as a Special Editor in the Central region. Jim Coggin of North Carolina will serve at large with special assignments relating to photography. These changes give us two Special Editors in all regions except the Southern which has three. In addition, there are three Special Editors at large, one in each region except the North Atlantic.

Retiring members have served most effectively. R. W. Cline of Arizona, appointed in 1944 as Special Editor of the Farm Mechanics Section, has had the longest tenure of any of the Editors terminating their services at this time.



H. P. Sweany



R. W. Cline

B. C. Lawson's service extended from 1947 at which time he was made Special Editor for the Professional Section. Mark Nichols, Business Manager of the magazine and State Director in Utah, served as a Special Editor since 1948. These men have made distinct contributions through their services. We wish them well.



B. C. Lawson



Mark Nichols

Fetterolf new A.V.A. president

THE newly elected president of the A. V. A. for 1951 is H. C. Fetterolf, Chief of Agricultural Education in the State Department of Public Instruction, Harrisburg, Pennsylvania. Mr. Fetterolf has been active in the association and in the field of vocational agriculture for many years and assumes his new responsibilities with a rich background of experience and leadership.

Mr. Fetterolf has had a part in the development of programs in vocational agriculture extending over some 35 years. He has served on educational missions to Korea and Germany.



H. C. Fetterolf

Custom work

(Continued from Page 187)

at tractor or truck operation who are dependable leaders. These boys are called leadmen and are given the job of teaching underclassmen how to operate our machinery on the job. Each leadman takes two trainees with him to each job and gives them instruction while doing custom work in our community. For us this system has worked exceedingly well. It gives the older boys a responsibility and place that is desired by all members and in teaching the younger fellows, they really learn to operate the equipment efficiently. This system frees the teacher for his regular class duties but does not free him from the continuous job of supervising and checking work done.

Records

One cannot overlook the very important job of bookkeeping and finances. Records on each day's job must be kept. The boys who worked, the job done, the address of the job and the charges are all necessary records. A fool-proof system of reporting and recording income and expenses is imperative. A single entry system has worked well for us. We believe a separate account in the local bank adds to the independence of the chapter and makes the boys feel more responsible for the program's success; however, the records must be available at all times for audit. The farm machinery finance record books give the chapter treasurer a responsible job and adds prestige to his office. A constant check of all of these records must be administered by the advisers.

We feel that our machinery program has added interest and experience to our instruction that could be gained in no other way in our community. In fact, we believe that our program has helped to keep boys in school that otherwise might have quit. Besides this it has taught our F.F.A. boys responsibility, cooperation and citizenship and has trained the students for useful work. What more could any program offer?

To be featured . . .

Themes for Volume 24 ♦ July, 1951-June, 1952

Agricultural Education Magazine

<i>Date Copy Should be Submitted</i>	<i>Theme</i>	<i>Month of Publication</i>
April 15	Program Planning (The cooperative approach to Farmer Education)	July
May 15	Guidance (Helping Individuals)	August
June 15	Developments in General Education and Their Relation to Agricultural Education	September
July 15	Rural Leadership	October
August 15	Farm Family Living	November
September 15	Management (Teaching Farm Management)	December
October 15	Establishment in Farming	January
November 15	Adjusting Agricultural Education to Technological Changes	February
December 15	The Rural Community	March
January 15	Evaluation	April
February 15	Needed Developments in Agricultural Education	May
March 15	Teacher Leadership (Business Activities of Teachers of Agriculture)	June

PLAN TO CONTRIBUTE!!

Father-son combinations



CALIFORNIA has three pairs of "Father-Son" agriculture teacher combinations.

The three senior partners have a record of more than 75 years of service in vocational agriculture departments. The junior members are just getting started.

In the front row, from the left, is Charles Perrin, who has taught from 1918 to 1950 at Chaffey Union high school, Ontario, and is still going strong. Next is son Bob Perrin, now in his second year at Newport Harbor high school.

On the next step is Elliott Garrison,

Jr., who taught one year prior to the war and is now at Shafter high school. Next to him is Elliott Garrison, Sr., head of the department at Hemet from 1921 through 1941 and now superintendent of the Hemet schools.

On the left of the top row is John Patterson, in his first year at Central Union high school, Fresno; and at his side is Frank Patterson, who has had 25 years of teaching experience in Wyoming, Colorado and California, culminating in his present job at Hughson high school.

GEORGE P. COUPER, *Supervisor*
San Luis Obispo, California

H. Gibson, teacher trainer in Oregon, retires

(Continued from Page 189)

and boys in the men's league of the Madison Avenue Baptist Church of New York City, where Dr. Charles A. Eaton, now Congressman from New Jersey, was minister. At this time he obtained an M.A. degree in education and psychology. It was while attending Columbia that he became interested in the agricultural education movement, and spent the next two years plus summer sessions attending Cornell University studying agriculture and agricultural education. At the same time he served part-time as graduate student instructor assisting Dr. George Works who was a prominent figure in the development of agricultural education.

Before coming to Oregon State College in the fall of 1921 as teacher-trainer in agricultural education, Mr. Gibson was agriculture instructor in the state normal school at Kearney, Nebraska, and in the high school at Ames, Iowa, for two years while serving as assistant professor of agricultural education in charge of all special methods courses and supervised teaching at Iowa State College, was state supervisor of agricultural education in Vermont for two years, and for two years served as head of the department of agricultural education and professor of vocational education at the University of Arizona.

Was Widely Known

A widely recognized authority in agricultural education, Professor Gibson has served that field in many different

Picture of the month Preliminary announcement

1. A contest open to all teachers of agriculture and teachers of farm veterans.
2. Monthly prize of ten dollars (\$10) for best entry each month.
3. Fifty dollars to be awarded for best of twelve monthly winners.
4. Photographs to tell the story of work in agricultural education.
5. All entries to be accompanied with a letter giving name and address of sender and specifying month (July to June) for which the entry is to be entered.
6. All entries should be mailed to reach Professor Coggin on or before the first of the third month preceding publication; i.e. April 1 for the July issue, May 1 for the August issue, etc.
7. Mail all entries to: J. K. Coggin, Professor of Agricultural Education, North Carolina State College, Raleigh, North Carolina.

capacities since coming to Oregon. A few will be mentioned here. He has been guest instructor in summer sessions at Colorado A. & M., at the University of Hawaii, and at the University of California. He was a member of the Washington, D. C. committee which wrote the 1940 Federal Board Bulletin on Objectives of Vocational Education in Agriculture, and contributed considerable material to two other Federal bulletins.

On learning of his coming retirement, S. S. Sutherland of California wrote: "No man had a better, more carefully thought through philosophy of agricultural education than he; no man applied it more conscientiously in his teachings. The measure of our regard for a fellow worker is reflected in how we address him. When our feeling toward him is one of respect alone, we generally use the formal 'Mister' or 'Professor.' When sincere liking and admiration is added to respect our mode of address likewise grows warmer and more informal. He was not Professor Gibson to me. He was 'Hoot'."

When learning of Professor Gibson's retirement, Mark Nichols of Utah made the following comment: "I am surprised to hear of Professor Gibson's retirement. The years slip by so quickly it is difficult to believe that 'Hoot' has arrived at the golden age of emeritus status. We shall greatly miss his sagacious contributions at our regional conferences. These were always greatly appreciated because they were sound and practical. 'Hoot' Gibson had both feet on the ground in his philosophy and understanding of programs in agricultural education. He saw farm problems as a farmer sees them."

The net worth of farmers' cooperative associations increased about 160 million dollars during 1949, to a total of 2,205 million on January 1, 1950. This compares with earlier totals of 1,264 million on January 1, 1945, and 826 million on January 1, 1940.

Directory

Vocational Education In Agriculture

Section I

Directors, Supervisors, and Teacher Trainers

Key to Abbreviations Used

d—directors s—supervisors as—assistant supervisors
ra—regional supervisors ds—district supervisors FFA—specialist FFA
t—teacher trainers it—iterant teacher trainers rt—research workers
Nt—Negro teacher trainers ams—subject matter specialists
fms—farm mechanics specialists As—area supervisor

ALABAMA

d—R. E. Cammack, Montgomery
s—J. C. Cannon, Montgomery
as—J. L. Dailey, Montgomery
as—L. L. Sellers, Auburn
as—H. F. Gibson, Auburn
as—T. L. Faulkner, Auburn
as—H. R. Culver, Auburn
as—H. P. Dilworth, Auburn
as—H. W. Green, Auburn
t—S. L. Chesnut, Auburn
t—R. W. Montgomery, Auburn
t—D. N. Bottoms, Auburn
t—H. T. Pruett, Auburn
ams—E. L. McGraw, Auburn
Nt—Arthur Floyd, Tuskegee
Nt—P. T. McQueen, Tuskegee
Nt—E. L. Donald, Tuskegee

ARIZONA

ds—J. R. Collison, Phoenix
t—R. W. Cline, Tucson
t—W. A. Schafer, Tucson

ARKANSAS

d—J. M. Adams, Little Rock
s—C. R. Wilkey, Little Rock
as—S. D. Mitchell, Little Rock
it—J. R. Tucker, Little Rock
ds—T. A. White, Monticello
ds—O. J. Seymour, Arkadelphia
ds—J. A. Niven, Russellville
ds—George Sullards, Jonesboro
t—Roy W. Roberts, Fayetteville
t—LaVan Shoptaw, Fayetteville
t—Denver B. Hulse, Fayetteville
Ns—L. R. Gaines, Little Rock
Nt—A. G. Kirby, Fine Bluff

CALIFORNIA

d—Wesley P. Smith, Sacramento
t—B. J. McMahon, San Luis Obispo
ra—K. B. Cutler, Los Angeles
ra—B. R. Denbigh, Los Angeles
ra—Howard F. Chappell, Sacramento
ra—A. G. Rina, Fresno
ra—G. A. Hutchings, San Luis Obispo
ra—M. K. Luther, San Jose
ra—R. H. Pedersen, Fresno
ra—J. Everett Walker, Chico
t—S. S. Sutherland, Davis
t—H. H. Burlingham, San Luis Obispo
ams—Geo. P. Couper, San Luis Obispo
ams—J. I. Thompson, San Luis Obispo
ams—John D. Lawson, San Luis Obispo
ams—W. J. Maynard, San Jose

COLORADO

d—E. C. Comstock, Denver
s—A. R. Bunker, Denver
as—Irwin C. Elliott, Denver
t—R. W. Canada, Ft. Collins
t—E. J. P. Early, Ft. Collins

CONNECTICUT

d—Emmett O'Brien, Hartford
s—R. L. Hahn, Hartford
t—W. Howard Martin, Storrs

DELAWARE

d—R. W. Heim, Newark
s—W. L. Mowida, Dover
t—Paul M. Hodgson, Newark
Nt—Wm. R. Wynder, Dover

FLORIDA

d—T. D. Bailey, Tallahassee
s—Harry Wood, Tallahassee
t—E. W. Harris, Gainesville
t—W. T. Lofton, Gainesville
ds—J. G. Smith, Gainesville
ds—F. L. Northrop, Gainesville
ds—T. L. Barriosau, Jr., Tallahassee
Nt—L. A. Marshall, Tallahassee
Nt—G. W. Conely, Tallahassee
ams—A. R. Cox, Tallahassee

GEORGIA

d—M. D. Mobley, Atlanta
s—T. G. Walters, Atlanta
ds—George I. Martin, Tifton
ds—C. M. Reed, Carrollton
ds—J. N. Baker, Swainsboro
ds—J. H. Mitchell, Athens
t—R. H. Tolbert, Athens
t—G. L. O'Kelly, Athens
ams—Ray V. Neal, Athens
t—A. O. Duncan, Athens
as—T. D. Brown, Atlanta
as—A. L. Morris, Atlanta
Nt—Alva Tabor, Fort Valley
Nt—S. P. Fugate, Swainsboro
Nt—B. Anderson, Fort Valley
Nt—McKinley Wilson, Fort Valley

HAWAII

d—W. H. Coulter, Honolulu, T. H.
s—C. F. Ferdun, Honolulu, T. H.
ds—Takumi Kone, Hilo, T. H.
t—F. E. Armstrong, Honolulu, T. H.
as—T. Horii, Honolulu, T. H.

IDAHO

d—William Kerr, Boise
s—Stanley S. Richardson, Boise
as—E. L. Lovell, Pocatello
t—H. A. Winner, Moscow
t—Dwight L. Kindachy, Moscow

ILLINOIS

d—J. E. Hill, Springfield
as—J. B. Adams, Springfield
as—A. J. Andrews, Springfield
as—H. M. Strubinger, Springfield
as—P. W. Proctor, Springfield
as—H. R. Damisch, Springfield
as—C. F. Anderson, Springfield
as—G. W. Doak, Springfield
as—H. F. Engelking, Springfield
t—H. M. Hamlin, Urbana
t—G. P. Deyoe, Urbana
t—J. N. West, Urbana
t—L. J. Phipps, Urbana
t—Leo L. Knutt, Urbana
t—Melvin Henderson, Urbana
t—H. J. Rucker, Urbana
t—W. H. Witt, Urbana

OFFICE OF EDUCATION, WASHINGTON, D. C.

Earl J. McGrath, U. S. Commissioner of Education
R. W. Gregory—Asst. Commissioner for Vocational Education
W. T. Spanton—Chief, Agricultural Education
D. M. Clements—Asst. Chief, Agricultural Education

... Specialists ...

H. B. Swanson, R. E. Naugher, A. W. Tenney, E. J. Johnson and W. N. Elam, Program Planning; A. H. Hollenber, Farm Mechanics.

INDIANA

d—Deane E. Walker, Indianapolis
s—H. B. Taylor, Indianapolis
t—B. C. Lawson, Lafayette
rt—Ralph Bentley, Lafayette
it—K. W. Kitta, Lafayette
it—H. W. Leonard, Lafayette
it—E. E. Clinan, Lafayette
it—I. G. Morrison, Lafayette
it—J. K. Coster, Lafayette

IOWA

s—H. T. Hall, Des Moines
as—M. Z. Hendren, Des Moines
as—G. F. Barton, Des Moines
t—Barton Morgan, Ames
t—John B. McClelland, Ames
t—J. A. Starrak, Ames
t—T. E. Saxauer, Ames
t—C. E. Bundy, Ames
t—V. J. Morford, Ames

KANSAS

d—C. M. Miller, Topeka
s—L. B. Pollom, Topeka
t—A. P. Davidson, Manhattan
t—H. F. Kugler, Manhattan
t—L. F. Hall, Manhattan
t—Loren Whipple, Manhattan

KENTUCKY

d—Watson Armstrong, Frankfort
t—E. P. Hilton, Frankfort
as—B. G. Moore, Princeton
as—S. S. Wilson, Frankfort
as—Floyd Cox, Lexington
as—W. C. Montgomery, Lexington
t—Harold Binkley, Lexington
as—Edward E. Ball, California
as—M. M. Botto, Munfordville
as—C. F. Eahan, Georgetown
as—Carl Lamar, Lexington
as—Ernest Threlkeld, Simpsonville
t—Carnie Hammonds, Lexington
t—W. R. Tabb, Lexington
t—Stanley Wall, Lexington
Nt—P. J. Manly, Frankfort
as—Ben Allen Burns, Owensboro
as—Duard E. Bayless, Morehead

LOUISIANA

d—J. R. Gamble, Baton Rouge
s—W. J. Parent, Baton Rouge
ds—I. N. Carpenter, Baton Rouge
ds—C. P. McVea, Franklinton
ds—Gordon Canterbury, Baton Rouge
as—A. Delmar Walker, Baton Rouge
fms—Curtis Jacobs, Baton Rouge
Nt—M. J. Clark, Baton Rouge
Nt—C. H. Chapman, Baton Rouge
t—A. Larriviere, Lafayette
t—A. A. LeBlanc, Lafayette
t—Roy L. Davenport, University
t—Malcolm C. Gaar, University
t—J. C. Floyd, University
t—Harry J. Braud, University

MAINE

d—Morris P. Cates, Augusta
s—John A. Snell, Augusta
as—t—Wallace H. Elliott, Orono

MARYLAND

d—John J. Seidel, Baltimore
s—Harry M. MacDonald, Baltimore
t—Arthur M. Ahalt, College Park
t—Ray A. Murray, College Park
Nt—Claud C. Marion, Princess Ann

MASSACHUSETTS

d—M. Norcross Stratton, Boston
s—John G. Glavin, Boston
t—James A. Taff, Amherst
t—Charles F. Oliver, Amherst

MICHIGAN

s—Harry E. Neuman, Lansing
as—Luke H. Kelley, Lansing
as—E. A. Lightfoot, Lansing
t—Wm. B. Hawley, Lansing
s—Harry E. Neuman, Lansing
as—Burton K. Thorn
as—Thomas H. Kerrey, Lansing
t—H. M. Byram, East Lansing
t—H. Paul Sweany, East Lansing
t—Raymond M. Clark, East Lansing
t—Raymond Garner, East Lansing
t—Guy Timmons, Lansing
t—Charles Langdon, East Lansing
t—L. A. Cheney, East Lansing
t—Duane Dalgleish, East Lansing
t—T. R. Miller, East Lansing
t—Jack Prescott, East Lansing
t—W. P. Schroeder, East Lansing

MINNESOTA

d—Harry C. Schmidt, St. Paul
s—G. R. Cochran, St. Paul
as—W. J. Kortessmaki, St. Paul
as—A. N. Pearson, St. Paul
as—A. M. Field, St. Paul
it—Alvin W. Donahoo, St. Paul
as—C. A. Anderson, International Falls
as—Ira Montgomery, Fairbault
t—M. J. Peterson, St. Paul
t—H. W. Kitta, St. Paul
t—Philip Teske, St. Paul
t—Gordon Swanson, St. Paul

MISSISSIPPI

d—H. E. Mauldin, Jr., Jackson
s—A. P. Fetherree, Jackson
as—E. E. Gross, Hattiesburg
as—E. W. Holmes, Oxford
as—V. P. Winstead, Morton
as—T. V. Majure, Udon
as—A. E. Strain, Long Beach
t—V. G. Martin, State College
t—J. F. Scoggin, State College
t—O. L. Snowden, State College
t—J. E. Bond, State College
Nt—A. D. Fobbs, Alcorn
Nt—A. G. Gordon, Alcorn
Nt—R. H. Darden, Alcorn

Note—Please report changes in personnel for this directory to Dr. W. T. Spanton, Chief, Agricultural Education, U. S. Office of Education.

